PUBLIC INPUT ITEM 4

City of
Steamboat Springs

September 2, 2015

Brent Newman
Program Manager, Water Supply Planning Section
Colorado Water Conservation Board (CWCB)
1313 Sherman St., Room 718
Denver, CO 80203
Brent.newman@state.co.us

Re: Comments Concerning the Second Draft of the Colorado Water Plan

Dear Mr. Newman:

The City of Steamboat Springs would like to thank the Colorado Water Conservation Board (CWCB) for its massive undertaking in the development of Colorado's Water Plan. As the largest municipality in the Yampa River Basin and as a resort community whose economy and quality of life depends upon its water resources and healthy environment, we recognized the need for a water plan that moves the State of Colorado from the status quo to a more sustainable water future. Furthermore, the City thanks the CWCB for the opportunity to provide public comment on the following four topics addressed in the Colorado Water Plan:

Trans-Mountain Diversions:
The Colorado Water Plan clearly states that "every conversation about water begins with conservation", but as Colorado's water supply gap grows to nearly 500,000 acre-feet, absent a shift in land-planning policies, municipal water conservation measures alone cannot fill that gap. But developing "New Supplies", or filling one region's water supply gap with another basin's water, only threatens the sustainability of our entire State's water future. The City of Steamboat Springs would oppose any of the Trans-mountain Diversions (TMD) proposed in the Yampa Basin as outlined in the South Platte's Basin Implementation Plan (BIP)—the Yampa River Pumpback near Maybell, the Middle Yampa Pumpback on the Elk River, or the Mini Yampa Pumpback at our headwaters. Any such project would be economically infeasible, environmentally risky, and devastating to our recreational economy and surrounding agricultural heritage.

Colorado River Compact—A Programmatic Approach: The proliferation of TMDs on the Colorado River System has weakened the State's ability to predictably meet its obligations under the Colorado River Compact. The Water Plan identifies the prioritization of a programmatic approach to prevent a Colorado River Compact deficit as a Critical Action Item. Without a thoroughly vetted programmatic approach, the burden of meeting compact obligations will likely fall on West Slope communities, like the City of Steamboat Springs, particularly if new TMDs are constructed to divert water out of the Colorado River Basin. We encourage the CWCB to continue to address the risk of Colorado River Compact curtailment as a top priority.

Equitable Allocation of Native Flows: Ensuring that the City of Steamboat Springs will enjoy sustainable supplies of clean water for municipal use and for preserving the environmental health and recreational economy of the Yampa River into the foreseeable future depends upon an equitable allocation of native flows to provide for in-basin needs. Although the Yampa River is better suited to help meet Colorado River

Compact obligations than to meet Front Range water demands via costly and environmentally taxing TMDs, the Yampa/White/Green BIP identifies the need for limited water development to guard against the impacts of sustained drought and growing water demands within the Yampa Valley.

West Slope Economies and Local Governments: The Colorado Water Plan rightfully highlights the value of a robust skiing and tourism industry and healthy watersheds to Colorado's future, but the implementation of the Colorado Water Plan must not sacrifice these values to satisfy the widening water supply gap. If the water demands of a distant and growing city take precedence over the economic future, quality of life, and environmental health of a resort community, like Steamboat Springs, Colorado's key values will be compromised. Therefore, the role of local governments in preserving the quality of life and sustainability of their communities must be safeguarded within Colorado's Water Plan. The "stream-lined" permitting approach to TMD's as described in the Water Plan should not circumvent the authority of local governments.

The scale of public engagement, collaboration, and participation in the development of our State's first water plan is clearly unprecedented. Once again, the City of Steamboat Springs commends the CWCB for taking on such a great task in a way that incorporates the values of Coloradoans on both sides of the Continental Divide.

Sincerely,

Bart Kounovsky
President
City Council

137 10th Street, P.O. Box 775088, Steamboat Springs, Colorado 80477
(970) 879-2060 • Fax (970) 879-8851 • www.steamboatsprings.net

PUBLIC INPUT ITEM 6

RE: Comments for Colorado Water Plan Final Draft
To: Colorado Water Conservation Board
From: Kate Greenberg, National Young Farmers Coalition
Date: September 4, 2015

The National Young Farmers Coalition (NYFC) is a national network of thousands of young farmers, ranchers, and consumers working together to reduce the barriers to young farmer success. NYFC envisions a country where young people who are willing to work, get trained, and take on a reasonable amount of risk can support themselves and their families in farming. Ensuring young farmers have the tools and representation to steward the West's water resources while growing good food is critical to their success—and to the future of Colorado.

Below are recommendations for ways in which the Colorado Water Plan should support the next generation of farmers and ranchers. Please also see our comments from July 2014 and following my testimony to the CWCB in September 2014. In general, the final plan should:

- Reduce barriers to young farmers and ranchers entering a career in agriculture
- Make a clear investment in protecting agricultural lands
- Enhance funding for irrigation efficiency
- Incentivize multiple stewardship values of agricultural water use
- Elevate soil health and water conservation as key solutions
- Integrate land-use and water-use planning & promote rigorous urban conservation
- Transmountain diversions are a last resort
- Promote education and outreach between farmers/ranchers and eaters
- Support a diverse agricultural sector

1. **Reduce barriers to young farmers and ranchers entering a career in agriculture:** As the average age of the American farmer approaches 60, young farmers and ranchers are essential to bridging the gap in agricultural production and land and water stewardship. Young farmers have the creativity and commitment to meet the water challenges we face. Yet they face insurmountable hurdles to entering a career in agriculture.

   As a state, we must prioritize reducing the barriers to entering a career in agriculture to allow young people to continue to build a vibrant Colorado agricultural sector. This includes addressing such barriers as land affordability, permanent farmland protection, capital, education and training, student loans, consumer education, land use planning, and prioritizing food security, rural economies, climate resilience, and natural resource stewardship.

2. **Make a clear investment in protecting agricultural lands:** Colorado, its metropolitan areas, eaters and other food chain stakeholders have a keen interest in investing in foodshed viability similar to watershed viability. Urban and supply chain stakeholders have the opportunity to become allies in protecting the states' farm and ranch lands. Innovative financial support, partnerships, and legal tools, such as conservation easements, should be supported and projects implemented to protect agricultural viability and get more young producers on the land. While the current draft identifies these opportunities, the state must take them further.

3. **Enhance funding for irrigation efficiency:** Funding for on-farm irrigation efficiency improvements, in addition to conveyance efficiency improvements, is critical as these technologies allow farmers to do more with less. Individual famers and ranchers should not bear the full cost burden of efficiency improvements particularly where such improvements provide multiple benefits to other users, including the environment.

4. **Incentivize multiple stewardship values of agricultural water use:** Agricultural water use is different from other uses of water. It often meets multiple needs and values beyond those directly intended for food or fiber production. These include wildlife habitat, groundwater recharge, instream flows, and open space values. These multiple uses need to be thoroughly addressed and valued and producers incentivized to manage for them.

5. **Elevate soil health and water conservation as key solutions:** Soil health is essential to water conservation and agricultural productivity. Soil health should remain in the final plan and should be heavily promoted as a critical management tool statewide.

6. **Integrate land-use and water-use planning & promote rigorous urban conservation:** We commend the state for linking land use planning with water use planning. Within this paradigm, we have immense opportunity to further collaborate to protect working farmland that steward water that eventually flows to our cities, grows food, and keeps rural communities thriving. Rigorous goals for urban water conservation should be maintained or exceeded in the final draft.

7. **Transmountain diversions are a last resort:** These threaten the social, economic and ecological foundation on which rural communities are built and in which agriculture thrives and should be considered a last resort to filling any water gap.

8. **Promote education and outreach between farmers/ranchers and eaters:** The CWP executive summary notes a "maturing water conservation ethic across Colorado." The state should continue to recognize that a deep investment in each Colorado resident's understanding of the importance of agriculture, stewardship practices and conservation is a critical asset to achieving our goals as a state and promoting and protecting a vibrant agricultural sector.

9. **Support a diverse agricultural sector:** The final plan should support agriculture of all scales and operation types including small- and mid- scale operations with local and regional markets. These are high-value operations often run by the next generation of producers and should be considered on par with other types of production agriculture.

National Young Farmers Coalition
1221 Main Ave. Durango, CO 81301

To achieve the above recommendations, the plan should:

- **In Ch. 6 P. 125:** Add to goals of agriculture: "protect and enhance Colorado's natural resources, and provide ecosystem services."

- **In Ch. 10 Section I.C.3.** Add "and agriculture" to the list of projects potentially supported by a green bond program

- **In Ch. 10 Section III.** Maintain or enhance rigorous urban conservation and reuse actions in final plan

- **In Ch. 10 Section III.c.2.** To "Develop new guidance…" add: "Guidance should include smart growth that plans for farmland protection and viability." Maintain or enhance integration of land use and water planning actions in final plan

- **In Ch. 10 Section IV.a.1.** To: "Establish an education and assistance program…and for new Colorado farmers to own land." Add: **"This may include financial and other support for land links, land trusts, and conservation easements that protect working farmland and make irrigated land affordable for the next generation of farmers and ranchers."** We are heartened to see in Ch. 6 P. 130-131 actionable steps that include promoting conservation easements and reimbursing "agriculture for value added to the environment…."

- **Ch. 10 Section IV.a.2.** Add "and landowner perspective" to "Host a stakeholder group…from a technical and legal perspective."

- **Ch. 10 Section IV.b.1.** We commend the inclusion of this language: "Develop a strategic education program to promote agricultural water conservation **and soil health initiatives."** Many local entities, such as the High Desert Conservation District in the Southwest, are already taking this on and should be supported in expanding these efforts, rather than reinventing the wheel. Add to this section: "Include in the program identifying key partners, such as conservation districts, who could receive financial and technical support through such a program to implement the curricula."

- **Ch. 10 Section IV.b.2.** Add the bold below: "Provide grants, loans, and technical support to refurbish diversions and ditches **and invest in on-farm efficiency,** to generate saved water…"

PUBLIC INPUT ITEM 7

Alamosa, Colorado
September 2, 2015

Statement of Charles Spielman re 2nd Draft of the Colorado Water Plan

My Name is Charles Spielman. I'm a Geological Engineer. I live in Monte Vista. I'm a former City Councilor and am President of the MVEDC. I have been a member of the RGB Round Table since its inception in 2006. I represent industrial, and some municipal, water providers, on the RGBT. I chaired the M&I Subcommittee that provided M&I input to the RGBIP.

I've scanned Chapter 10 of the Second Draft of the Colorado Water Plan. Here are my impressions of the proposed projects, programs, and activities:

Very good	29	
Good	12	
Too General	4	
Not Necessary	1	
Questionable Value	13	
Not Good	2	
Not Applicable to RGB	21	-of which 12 are regarding municipal water
Total	82	

If the drafters of the State Water Plan are interested, I would be pleased to provide a list of my impressions of each project, etc.

The lack of applicability re municipal water is because in the RGB, municipal and industrial water is only about 1.5 % of water use. Agricultural water use is 98.5%. Almost half of our population is not served by a municipal water system. We don't have a need for muni water conservation. There is a conservation factor, however: cost. A significant number of our households don't irrigate their yards, either by choice or out of necessity.

In a larger context, Chapter 10 projects, etc, still don't constitute a plan. My suggestion is to include a situation/plan section for each basin – a plan that defines basin problems, sets a framework for solving them, and then develops projects, etc, aimed at solutions.

That's what some of us have recommended for the Rio Grande Basin, in order to make the RGBIP into a true action plan.

M E M O R A N D U M

July 31, 2015

TO: Mike Gibson, Chairman
Rio Grande Basin Round Table

CC: Rep. Ed Vigil, Vice Chairman
Colorado Legislative Water Resources Review Committee

FROM: Charles Spielman & Nicole Langley
With primary data and project suggestions by permission from Eric Harmon and
With support and/or contributions from Ed Nielsen, John Noffsker, Cory Off, and Kirk Thompson

RE: A Rio Grande Basin Action Plan

Mike --Thank you for distributing the article which appeared July 3, 2015 in the *Colorado Independent* titled "Waiting for Chapter Ten: What's the Plan in the State's Water Plan?" The article is posted here: http://www.coloradoindependent.com/154285/waiting-for-chapter-10-whats-the-plan-in-the-state-water-plan. The concerns expressed in that article relate to the first draft of the Colorado Water Plan. As Jim Lochhead, CEO of Denver Water, is quoted, "It's a nice compendium of issues and subject matters of all things water in Colorado, but it's not an action plan…. It doesn't set an agenda for what Colorado needs to do in order to meet the challenges facing the state."

Since early in April of this year a number of us have been discussing the fact that the Rio Grande Basin Implementation Plan (RGBIP), in all of its drafts and revisions, is also not a plan. Given the seriousness of this Basin's water situation, we decided to create a true Action Plan for the Rio Grande Basin Roundtable (BRT). This document is an initial step, suggesting projects to be undertaken and funded in accordance with the Basin's most serious water problem – the unsustainable management of surface/ground water.

You have established and often articulated that priority, Mike, stating it in every summary letter which you send to CWCB as you transmit the Roundtable's recommendation to fund a project: *"*The Rio Grande Inter-Basin Roundtable has determined that **the single, most critical water issue confronting the Rio Grande Basin is the current unsustainable management of surface and ground water**. The RGBRT has made the decision that water activities that address this issue be favorably considered for funding from the Water Supply Reserve Account, SB 2005 - 179 (WSRA Funds)…*"*

The consistency and frequent repetition of this message has established, at least tacitly, that the policy of this Basin is to give top priority to resolving this problem. The RGBIP, as presently drafted, does not reflect the policy or the priority, and does not contain an action plan to address either.

In addition, as anyone familiar with the water situation in this Basin knows, it is critically important to address the striking imbalance, or gap, which exists between the amount of water required to maintain the health of the region's agricultural economy versus the decreasing availability of water in the Basin's streams, reservoirs, and aquifers.

We believe this Action Plan will assist the Roundtable to improve the efficiency and effectiveness of the WSRA grant-review process, ensuring that priority projects receive priority consideration in funding.

Mike, we ask the RGBRT to endorse and support this Action Plan, and we hope that it will be used as a starting point for implementing and prioritizing relevant projects, following the guidelines we suggest.

We also are asking Rep. Ed Vigil, Vice Chair of the Legislative Water Resources Review Committee (and our own State Representative from House District 62), to distribute this document to the members of the WRRC in anticipation of their upcoming visit to the San Luis Valley.

We hope this action plan will be included in the Rio Grande Basin Water Implementation Plan (RGBIP), either by incorporation or by reference as an actionable companion document. In either case, please refer to this grass-roots contribution to the Roundtable's important work as "The Rio Grande Basin Action Plan."

Thank you very much.

Sincerely,

REASONS & BASIS FOR A RGB ACTION PLAN

The essential elements of any plan require (1) establishing a set of general guidelines for compiling the plan; (2) establishing a set of appropriate objectives within those guidelines; (3) listing the steps or series of steps or actions necessary to achieve these objectives; (4) setting a specified time frame or schedule in which to achieve those actions; and (5) identifying the potential or designated resources required to carry out the plan.

Evaluated on the basis of these parameters, it is obvious that the existing RGBIP lacks an overall guiding coherence or philosophy; it does not identify the Basin's diminished aquifers as a priority for further study nor does it suggest projects aimed at mitigating the imbalance between water supply and agricultural needs. The RGBIP establishes no prioritized approach to facilitating critically needed projects which might help solve the Rio Grande Basin's water crisis. As a result, the Basin Implementation Plan compiled by DWC consists of a valuable collection of interesting and pertinent information, but it does not meet the above stated requirements of a plan.

This Action Plan identifies and prioritizes water issues – current and proposed -- which will directly or indirectly assist in restoring the aquifer and/or will ensure the sustainable management of surface and ground water, with special attention to prospering the health of the San Luis Valley's farming/ranching activities.

Because of the importance of agriculture in the economy of the San Luis Valley, the Action Plan should focus on identifying ***actions*** which will (1) increase the water available for agricultural use: (2) improve the efficiency and management of water delivery to farm and ranch land; (3) increase the effectiveness of agricultural water use by studying and applying different farming methods and crops; and, importantly, (4) provide information and data through hydrologic and geologic studies to guide the Basin's actions to restore and maintain the Basin's aquifers.

Taken together, projects in these four areas of focus, if proactively funded and implemented, will help to carry out the Basin's stated policy priorities and thus sustain a thriving agricultural economy. We hope this Action Plan assists the Roundtable to identify, prioritize, and support high priority projects for CWCB/WSRA funding.

This Action Plan does not presume to replace or duplicate the good work or the worthy projects already underway or anticipated, either by existing water groups, or in the BIP. Instead, it suggests a framework within which the Roundtable can more effectively support and fund a wide range of critically needed current and future studies, activities and projects.

In particular, this document is not intended to criticize or downplay the efforts of the many individuals and entities who have worked for many years to mitigate the water shortage in the Rio Grande Basin. The projects and studies recommended by the Action Plan are intended to follow, improve on, or complement past efforts and currently planned work.

There is an element of facilitation and assistance that should be incorporated into the Action Plan, however, that goes beyond the current efforts of the RGBRT, at least up to now, i.e. an enhanced level of grant-applicant facilitation. As we have suggested previously, this might be accomplished in one of several ways: (1) by helping project proponents, as needed, to navigate the guidelines and procedures necessary to obtain funding; (2) by eliminating unnecessary delays in the Roundtable review process; (3) by seeking out entities to apply for and carry out worthy projects; and, (4) perhaps, in some cases, by designating or forming a group capable of undertaking a water project or water study and meeting the application requirements established by the SB-179/WSRA guidelines.

REVIEW & ANALYSIS OF PROJECTS UNDERTAKEN TO DATE

As a precursor to compiling an Action Plan for the Rio Grande Basin, (RGB) it is informative to examine the activities and projects undertaken under the auspices of the RGBRT, and the results of this effort, in terms of meeting Basin/State priorities thus far. To clarify, "under the auspices" means that projects were either encouraged, or supported, by the RGBRT and were funded through WSRA and/or other sources, as the Roundtable itself is not an eligible entity for undertaking a project on its own.

Since its inception in 2006, the RGB has approved and recommended CWCB funding of 52 projects and activities, per Senate Bill 179 guidelines. Generally these projects and activities relate to improving or enhancing water supply, storage, management, and use in the basin. A summary of these projects and activities follows:

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Funding of the projects has been provided approximately in this manner:

Basin Funds	$ 2.660,000
Statewide Funds	$ 9,949,000
Subtotal	$12,609,000
Matching funds from Applicants	$31,008,000 (Cash & In-kind Contributions)
Total Funding	$43,617,000

The summary table on the following page provides further detail about the projects, classified according to their primary purposes. These statistics encapsulate the activities of the RGBRT and program applicants over the history of the Roundtable thus far, grouped according to the priorities stated by the applicants in their project summaries.

SUMMARY TABLE – RGB PROJECTS FUNDED & STARTED OR COMPLETED
2006 – JUNE, 2015

Project Type	No.	WSRA Funding	Basin Funds	State Funds	Match
IMPROVE/INCREASE WATER STORAGE	11	$ 5,013,600	$ 476,000	$ 4,537,600	$ 7,960,386
IMPROVE AQUIFER STORAGE	3	$ 218,250	$ 76,250	$ 142,000	$ 38,000
WATERSHED RESTORATION	7	$ 1,776,700	$ 447,200	$ 1,329,500	$ 2,616,600
IMPROVE WATER MANAGEMENT	13	$ 2,281,980	$ 572,700	$ 1,709,280	$ 1,114,605
PROTECT/IMPROVE WATER QUALITY	4	$ 439,435	$ 239,435	$ 200,000	$ 1,790,700
PUBLIC EDUCATION/OUTREACH	4	$ 97,337	$ 97,337	$ -	$ 277,338
MINIMIZE/IMPROVE WATER USE	2	$ 138,200	$ 138,200	$ -	$ 5,519,492
GENERAL & ADMINISTRATIVE	3	$ 433,918	$ 287,975	$ 145,943	$ 2,500
CONSERVE RIVER-BORDER PROPERTY	4	$ 2,145,000	$ 260,000	$ 1,885,000	$ 11,688,000
IMPROVE STREAM FLOW	1	$ 64,500	$ 64,500	$ -	$ -
	52	$ 12,608,920	$ 2,659,597	$ 9,949,323	$ 31,007,621

Farming and ranching constitute one of the primary economic and social activities in the Basin. Considering the serious shortage of water for agriculture, the figures show that the RGBRT has appropriately emphasized and funded a number of projects designed to improve/increase water storage and improve water management.

However, the figures illustrate a very low-key commitment to projects aimed specifically at studying or addressing aquifer water storage issues ($218,250) and/or minimizing/improving water use ($138,200) by such measures as improved farming methods and researching or growing crops that require less water.

This project summary indicates a relatively large commitment of funds to watershed restoration ($2.6MM) and to creating environmental conservancies of river-border property ($11.7MM). Although both of these project types are worthwhile activities, neither contributes significantly to reducing the agricultural water shortage. Whether watershed restoration and land conservancies represent a net economic benefit to water users in the RGB is a question which might be addressed in an economic study, perhaps as a project of the Action Plan. The point to be noted, however, is that the Roundtable's past allocation of funds has not been driven by any strategy or policy.

Under the recommended Action Plan, WSRA funds should be appropriated with a sense of urgency and targeted to address more of the core water crises faced by the Rio Grande Basin. Roundtable members and other Basin water experts have the experience and capability to ensure that more such projects do get organized; that they get adequately and appropriately funded; and that every effort be made to close the gap between present and future water needs and available water resources.

A review of approved RGB projects from a **chronological** perspective discloses another data set of interest:

SUMMARY TABLE – APPROVAL CHRONOLOGY OF RGB PROJECTS
2006 – JUNE, 2015

FUNDING APPROVED IN YEAR	Number of projects	WSRA FUNDING	BASIN FUNDING	STATE FUNDING	MATCH
2007	5	$ 576,950	$ 184,950	$ 392,000	$ 478,600
2008	6	$ 2,732,400	$ 722,000	$ 2,010,400	$ 10,370,300
2009	4	$ 546,500	$ 196,500	$ 350,000	$ 1,379,945
2010	4	$ 267,000	$ 169,000	$ 98,000	$ 663,900
2011	7	$ 453,743	$ 171,600	$ 282,143	$ 735,510
2012	5	$ 3,346,244	$ 274,564	$ 3,071,680	$ 3,971,275
2013	15	$ 3,867,883	$ 674,783	$ 3,193,100	$ 6,918,766
2014	5	$ 668,200	$ 246,200	$ 422,000	$ 5,594,324
2015 SO FAR	1	$ 150,000	$ 20,000	$ 130,000	$ 895,000
TOTALS	52	$ 12,608,920	$ 2,659,597	$ 9,949,323	$ 31,007,621

As indicated, there were 15 projects approved for funding in 2013, and an average of 5 projects funded each of the other years, 2007-2014. The drop back to only 5 projects in 2014, and only one approved so far in 2015 indicates a critical need to refocus Roundtable efforts to encourage more applicants to seek funding, especially if they directly relate to resolving the Basin's critical water issues.

Another approach to support that planning goal would be to use the outreach function of the Roundtable to spark public interest in issues which the Roundtable considers critically important and worth funding; to demonstrate funding patterns which directly address real issues faced by (mostly) farmers and ranchers in the Basin; and to simplify and facilitate the grant application process by reducing a potential applicant's obstacles or difficulties. The RGB Action Plan suggests the best remedy is to bring more requests for funding to the Roundtable; to improve the overall quality of applicant requests; and to ensure that those proposals, when funded, will significantly contribute to increasing our understanding of the Basin's aquifers and/or closing the gap between the Basin's water needs and the diminishing availability of water.

GUIDING PRINCIPLES

As a totally volunteer and grass-roots research and writing effort, we have established some guiding principles, providing a framework for the Action Plan – a set of parameters for considering and including individual plan elements.

We felt that the present BIP does not establish any such criteria, and we believe it is important to do so. The following Guiding Principles have been used to compile and implement the Action Plan.

1. The plan should be "consistently flexible" and readily amendable as conditions or Roundtable/Basin objectives change. As the Roundtable sees the benefits of working with the Action Plan, and as its usefulness is tested and becomes evident, we believe an increased participation by Basin water users will develop.

2. The plan should require and offer a more proactive engagement with critical water issues. The current BIP does not offer any planned course correction for the Roundtable's random approach to the review and the recommendation for funding of projects. Proactive engagement with critical water issues will help to prioritize, select and fund projects which best address them.

3. The plan should seek a simplified and effective way to facilitate the selection and approval of funding requests. There should never be a double standard, with some applicants allowed to slide through or ignore established protocols while others are held to very strict standards. A uniform set of requirements should be required equally from any and all applicants for funding.

4. The plan should prioritize critical projects. Given the serious and likely increasing shortage of water for farming in the Basin, projects designed to improve water storage, to evaluate the relevance and accuracy of various models, to improve water management, and to optimize agricultural water use should be given very high priority for both near- and long-term planning.

5. The plan should proactively seek ways to bring more of these critical projects to the Roundtable and assist their proponents in seeking WSRA (and other) funding. Some ideas might prove to be of little value, and would need to be weeded out, but others might suggest experimental or perhaps even "risky" ideas which might break new ground. Diversity and an increase in the volume, relevance and quality of funding requests will ultimately help the Roundtable – and all of us -- find solutions to the Basin's unsustainable surface water and groundwater management.

6. The plan should promote outreach and education efforts which interactively engage communities throughout the entire Valley. Publications and distributed material should reduce the amount of top-down state-issued PR language and increase exposure to/from locally relevant issues.

7. Outreach efforts should emphasize the critical needs of the Basin and spread the word that WSRA funding is available, accessible, and important for solving problems right here, in our own communities.

RECOMMENDED PROJECTS & ACTIVITIES

The RGBIP includes a number of DiNatale Water Consultant Project Sheets describing current, pending or proposed projects to be funded. That is a start, but we maintain that a number of more critical projects need to be given priority.

Following is a preliminary list of proposed and, in some cases, already anticipated projects which we believe should be prioritized for funding. This list has been compiled in accordance with the foregoing discussion and premises. We regard it as a work in progress, anticipating additions and revisions as the Roundtable and other interested parties become familiar with, and involved in, the Action Plan process.

As it turns out, many of the recommended projects are for data-gathering or inventorying, which indicates a need for more information and a greater emphasis on research and study to guide future water use decisions.

Projects are presented in two groups: (1) those considered for more immediate implementation are sequentially listed for 2015-2016; (2) projects anticipated under an extended timeline are grouped according to common aspects of their scope and content, and/or their bearing on the currently unsustainable water management situation. These are general and somewhat arbitrary scheduling notes, but they convey the relative urgency of these projects. By specifically listing these projects we hope to encourage more of a similar nature, injecting a continuum of high priority projects into the WSRA funding stream.

The project list has been compiled by the primary authors of this proposed Action Plan, Charles Spielman and Nicole Langley, with important primary data from Eric Harmon and with additional input, guidance, suggestions and/or written communication from the supporters and contributors mentioned on Page 1 of this memorandum. With his permission, we have included his cover letter and recommendations at the end of this document. Cory Off also submitted written recommendations which have been incorporated into the list.

Several supporters of the Action Plan have suggested conducting a study of the economy of the RGB, with an emphasis on the impacts of water scarcity on the agricultural sector. We believe that conducting such a study, with expertise drawn from the RGBRT and other local sources, could have a significant impact on decisions affecting our agricultural industry and on optimizing its use of water.

In our opinion, the water shortage is sufficiently severe in the RGB that the RT cannot afford the luxury of passively waiting for projects, waiting for applicants to come forward, or reactively reviewing water projects as they happen to come before the membership for approval. We believe this Action Plan provides some helpful suggestions on how best to take advantage of the WSRA funding that Colorado makes available to our Basin.

We hope the Rio Grande Basin Roundtable will consider the recommendations of this Action Plan and adopt this document, either as part of the official RGBIP or as an **actionable** companion document to the present RGBIP.

(list of projects on the following page)

		PRLIMINARY PROJECT LIST - RGB ACTION PLAN 2015-2016		
SUGGESTED INITIATION SCHEDULE	CATEGORY	PROJECT DESCRIPTION	PROPONENT OR AGENCY	COMMENTS
2015-Q3	GEOL/HYDRO	INSTITUTE PROGRAM TO REQUIRE GEOPHYSICAL LOGGING OF ALL NEW OR REWORKED WATER OR MONITOR WELLS	DIV 3 WATER ENGINEER	RGBRT TO RECOMMEND THIS PROGRAM BE INSTITUTED BY COLO STATE ENGR. Funding to help support compliance
2015-Q3	GEOL/HYDRO	PREPARE AN INVENTORY REPORT W/ MAPS SHOWING STREAMFLOW & WATER STORAGE IN RGB	DIV 3 WATER EGR , RGBRT, & SLVWCD, ETC	COOPERATIVE PROJECT BY ENTITIES LISTED, AS BACK-GROUND FOR OTHER STUDIES
2015-Q3	WATER STORAGE	INCREASE STORAGE CAPACITY IN TRUJILLO MEADOWS RESERVOIR	CONEJOS WATER CONSERV ANCY DISTRICT	TOTAL PROJ EST COST IS $15.5MM; EST COST IN 2015 IS $1.0MM FOR INIT. STUDIES
2015-Q3	WATER STORAGE	MOUNTAIN HOME RESERVOIR DAM OUTLET REPAIR	TRINCHERA IRRIGATION CO	TOTAL PROJ EST COST IS $500,000; $270,000 in 2015 & $230,000 in 2016
2015-Q4	GEOL/HYDRO	DEVELOP AND CARRY OUT PROGRAM TO IMPROVE ACCURACY OF DRILLER'S LOGS	CONSULTING GEOL. FIRM	SEEK/SELECT/FUND GEOL.
				CONS. FIRM TO EXECUTE PROG
2015-Q4	GEO/HYDRO	PRODUCE A COMPREHENSIVE MAP OF BLUE CLAY OCCURRENCE ALL ACROSS EGB	GEOL. CONS. VARIOUS FIRMS & ENTITIES	COORDINATE STAKEHOLDER INPUT, ADMINISTER/FUND RESEARCH PROJECT
2015-Q4	AGRICULTURE OPERATIONS	CONDUCT A COMPREHENSIVE & IN-DEPTH STUDY OF THE RGB ECO-NOMY W/ EMPH. ON AG SECTOR	MONTE VISTA ECONOMIC DEV CORP	PROVIDE FUNDING/SUPPORT FOR STUDY & INCORPORATE INPUT FROM MANY CONTRIB-UTORS; Local expertise and modeling resources used to reduce cost.
2016-Q1	GEOL/HYDRO	CONDUCT A COMPREHENSIVE STUDY OF GROUND WATER INFLOW AROUND VALLEY RIM	GEOL. CONS. FIRM	SEEK/SELECT/FUND GEOL. CONS. FIRM TO EXECUTE PROGRAM.
2016-Q2	GEOL/HYDRO	CONDUCT A COMPREHENSIVE STUDY OF WATER GAIN/LOSS FROM CANALS ALONG VALLEY PERIMETER	GEOL. CONS. FIRM	PROVIDE SEEK/SELECT/FUND GEOL. CONS. FIRM INCLUDE OTHER AREAS, PROVIDE ADMIN SUPPORT IF NEEDED
2016-Q2	GEOL/HYDRO	UNDERTAKE PROGRAM OF INSTALL-ING PIEZOMETERS TO MONITOR FLUCTUATIONS IN CONFINED AQUIF.	FOLLOWING LEAD OF CONEJOS WATER USERS ASSOC, OTHER STAKE-HOLDERS & HYDOL. CONS. FIRM	PROVIDE SEEK/SELECT/FUND HYDROL. CONS. FIRM, INCLUDE OTHER AREAS, PROVIDE ADMIN SUPPORT IF NEEDED
2016-Q3	WATER DEVEL-OPMENT/ MGMT	INVENTORY ALL RESERVOIR SITES & RESERVOIRS IN RGB; INVESTIGATE OPER, ECON, & LEGAL FEASIBILITY OF CONSTR./ENLARGING RESERVOIRS	HYDROL. CONS. FIRM	SEEK/SELECT/FUND HYDROL CONS. FIRM TO EXECUTE PROGRAM. 1 YR PROGRAM
2016-Q3	AGRICULTURE OPERATIONS	CONTINUE INVESTIGATION OF WAYS TO REDUCE AG WATER USE. (SOIL QUALITY, DRIP IRRIGATION, DIFFERENT CROPS, MAGNETIZED WATER, ETC.)	WATER USERS CONSERVANCY DISTRICTS, ETC	SEEK OUT NEW PROJECTS PROVIDES ADMIN/FUNDING ASSISTANCE, PROVIDES COMMUNITY OUTREACH & TECHNICAL INREACH, ASSISTS IN RESEARCH, DOCUMENTATION, REPORTING, ADMINISTRATION

SUPPORTING DOCUMENTATION & INPUT – On following pages

HRS WATER CONSULTANTS, INC.
8885 West 14th Avenue
Lakewood, Colorado 80215
(303) 462-1111
Fax: (303-462-3030

CONSULTANTS IN
HYDROGEOLOGY AND
WATER RESOURCES

ERIC J. HARMON, P.E.
eharmon@hrswater.com

April 19, 2015

900-PB

Rio Grande Basin Water Plan – M & I Subcommittee
Attn: Ms. Nicole Langley

Re: Rio Grande Basin Water Plan hydrogeology and ground water related projects and activities

Dear Subcommittee Members:

At the invitation of Mr. Charles Spielman, I have reviewed and considered the draft Rio Grande Basin Water Plan (7/31/2014) and Mr. Spielman's 4/11/2015 memorandum on the draft Plan. I have prepared this letter, with attachment, to offer my initial thoughts as to suggested direction and content for specific ground water-related projects, activities, and efforts for the Basin Water Plan.

Please understand that although I have been aware of the time-consuming efforts expended by the Rio Grande Basin Roundtable, the Basin Water Plan consultants, stakeholders, and interested individuals since the inception of the Plan studies, I have not, until this time, offered comment. As context for your consideration of my comments, you should know that my firm, HRS Water Consultants, Inc., has ongoing contractual relationships with the Colorado Division of Water Resources / CWCB for the RGDSS and the Ground Water Rules, and the National Park Service (Great Sand Dunes). HRS also represents public water suppliers, private water user groups, irrigationists, and others in the San Luis Valley. In addition, HRS, at times in the recent past, has acted in a consulting capacity on ground water related activities on behalf of RGWCD, Conejos WCD, Rio Grande County Commissioners, and others in the basin. The comments and thoughts offered in this letter are my own, and do not represent the opinions, thoughts, or positions of any individual or entity that my firm represents now, or has represented in the past.

My comments are twofold: first, I would like to comment briefly on Mr. Spielman's April 11, 2015, memorandum. Second, I offer my initial thoughts on specific projects and activities related to ground water that I feel are needed to fill gaps in our understanding.

Comments on April 11, 2015, Memorandum

The overriding impression I sense from Mr. Spielman's memorandum is frustration at a long process that appears, as yet, to offer little in the way of specific direction for a Rio Grande Basin Water Plan. From my own, admittedly brief, review of the draft Rio Grande Basin Water Plan

(DiNatale Water Consultants, "DWC", 7/31/2014) I generally agree with this view. This is in no way a criticism of DWC or the process. From past involvement in a number of planning and policy level studies, I have an understanding of the stakeholder participation process. However, I find it disappointing that the majority of the draft document is devoted to developing an overview and background for the basin, with relatively little emphasis on the immediate and overriding issue: how to address and correct unsustainable water use in the San Luis Valley. In addition, the majority (although not all) of the projects identified in Section 6 of the draft document do not address what I consider key issues:

- What data or studies are needed to fill major data gaps, or gaps in our understanding, of the San Luis Valley aquifers in terms of ground water recharge, discharge, and interactions between ground water and surface water?

- What baseline of information, and what ongoing measurements or monitoring, will provide the best and most robust understanding that can be incorporated into the RGDSS ground water model (or a successor model in the future) and efforts at achieving aquifer sustainability.

As a high-level policy guidance document, it may be argued that the draft Basin Water Plan need not propose projects or activities at a detailed level. I disagree. Although a clear policy direction unquestionably must be articulated in the Basin Water Plan, I feel, in addition, that specific projects or tasks should be identified that address the issues noted above. I think the document needs to specify items, tasks, or projects that can be implemented now or in the very near future to help address these issues.

Mr. Spielman's memorandum contains a "starter list" of tasks and projects, in several categories. In regard to geology and hydrology, several suggestions are made as to studies and projects needed, and a model of the ground water system. Having been involved in the RGDSS development and refinement process since its inception, I can say that these components, tools, and documentation, for the most part, already exist. However, the fact that there is still a call for these basic documents and studies suggests that some of the RGDSS documents and tools are so technical or complex that it is difficult for even a well-informed and interested public to understand their content and workings. Or, perhaps, it may be that many of the RGDSS documents are simply too hard to find. It appears to me from Mr. Spielman's list, and also from my participation in public presentations, peer review meetings, and various forums on the RGDSS over the past 17 + years, that there may be a need for an improved documentation and communication process.

The RGDSS calibrated ground water model is the culmination of extensive, specific hydrologic and hydrogeologic studies and investigations, the results of which have been incorporated into model development, calibration, and refinement, in a phased and continually peer-reviewed process over many years. As with any model, and particularly for a regional model designed to simulate a large and hydrogeologically complex basin, there are now, and probably will continue to be, data gaps that should be filled, refinements needed, and a need for improved understanding of the aquifers.

Ground Water Projects & Activities

Attached to this letter is my initial list of suggested tasks or projects. My suggestions are all ground water related, as this is my area of expertise and experience.[1] This is not to suggest that other, interrelated issues are of lesser importance, or should necessarily be accorded lower priority in the context of the overall Basin Water Plan.

In the attachment that follows, I have tried to convey my initial thoughts on projects or tasks that would produce data or information that will be immediately useful to enhance our understanding of the aquifer system of the Valley, as the water users and managers try to move toward sustainability. Some of these ideas have been discussed by members of the RGDSS Peer Review Team as possible activities for future enhancements to that project, and some are ideas that I have not previously discussed with anyone. This is not a comprehensive list, as I've had only a few days to consider the matter. I expect that upon further consideration, the list will grow and become refined. Please consider it a draft list at this time. I have not attempted to assign a relative priority or an estimated cost to these ideas, as there simply has not been time to do so. The ideas are not presented in any particular order.

I look forward to the Subcommittee's comments and questions.

Very truly yours,
HRS WATER CONSULTANTS, INC.

/s/ Eric J. Harmon

Eric J. Harmon, P.E.
Principal

Attachment: SLV Ground Water Project Ideas

[1] The Law of the Instrument: "If your only tool is a hammer, the whole world looks like a nail." - attributed to Abraham Maslow.

San Luis Valley Ground Water Project Ideas
Eric J. Harmon, P.E. April 19, 2015

1. Activity or Project: Canal gain/loss measurements

Affected Area: Major canals, particularly in alluvial fan / SLV edge areas, where canals are thought to be relatively leaky, and where little or no leakage data presently is known to exist.

Need: Improved canal leakage data is needed to better define this component of recharge for the RGDSS model. Significant recharge to the unconfined and the confined is thought to take place through canal leakage in Valley-edge areas, where the confining clays are thin or nonexistent, and where surface soils are coarse and permeable.

Summary of Activity:

- Perform initial time-concurrent measurements by current meter at accessible points on canals where insufficient data now exists.
- Identify locations for future staff gauges and data loggers for future time-series canal loss data.
- Design and install staff gauges / data loggers.
- Maintain, record, and document the canal leakage data.

Time Frame:

- Initial measurements: one irrigation season.
- Design / installation: one year.
- Measurements: ongoing.

Desired Outcome: Improved understanding and database of ground water recharge from canal leakage.

Follow-up Activity: Ongoing measurements and reporting by ditch & canal companies.

Relative Priority:

Estimated Cost:

Comments / Notes: Several canal companies and water management entities (e.g. Conejos WCD) are already engaged in this type of project in their areas.

2. Activity or Project: Improved network of confined aquifer and nested (i.e. multi-aquifer) piezometers (monitoring well) and head measurements.

Affected Area: Valley-wide.

Need: Improved understanding of confined aquifer head changes over time are needed to help provide a sufficient database for aquifer sustainability, and for an improved understanding of interactions between aquifer layers.

Summary of Activity:

- Identify locations for installation of new confined aquifer or multi-completion piezometers (i.e. unconfined and confined head measurements at the same location).
- Secure needed easements or landowner permission.
- Design and install piezometers and data loggers.
- Maintain, record, and document the confined and unconfined head data.

Time Frame:

- Initial site identification: 6 months to 1 year.
- Design / installation: one year.
- Measurements: ongoing.

Desired Outcome: Improved understanding and database of ground water head changes, ground water in storage, water table and head gradients, and aquifer layer interactions.

Follow-up Activity: Ongoing measurements and reporting by Subdistricts or management entities (e.g. Conejos WCD, RGWCD)

Relative Priority:

Estimated Cost:

Comments / Notes:

- Colorado DWR (and the Division 3 Engineer's Office), Conejos WCD and RGWCD have initiated efforts and discussions for an improved piezometer network.
- Piezometers are particularly needed in areas of high ground water pumping and high seasonal head fluctuations, and also in edge areas of the Valley, to understand layer interactions where confining clays are thin to non-existent.

3. Activity or Project: Refine estimates of ground water inflow to the SLV from the San Juan and Sangre de Cristo mountain fronts.

Affected Area: Eastern and western rims of the SLV.

Need: Improved understanding of the annual volume of water that enters the Valley as ground water (as distinct from what is termed 'rim inflow'). Currently, the ground water inflow estimate in the RGDSS model for the San Juans is a very general and approximate value, and for the Sangre de Cristos is effectively zero.

Summary of Activity:

- On a sub-basin basis, identify and develop a GIS database of water level measurements from existing driller's reports and USGS measurements. Also from the 2012 Rio Grande County Hydrogeology Study (Davis Engineering, GeoLogical Solutions, and HRS Water).
- Secure well owner permission, and fill data by making new measurements of water levels in wells in bedrock formations near the rim of the Valley.
- Use the GIS to establish a range of water table gradients to the Valley.
- Use existing well data, geophysical logs, and geologic mapping to estimate ranges of hydraulic conductivity for sub-basins tributary to the Valley.
- Use Darcy's Law to estimate sub-basin annual ground water contributions to the Valley.

Time Frame:

- Initial GIS database development: 3 to 6 months.
- Field water level measurements: 2 field seasons.

Desired Outcome: Improved understanding and database of water table gradients and annual contribution of water that enters the SLV as ground water.

Follow-up Activity: Measurements: contemplate refreshing the database periodically (5 years?). If significant annual changes in snowpack / runoff occur, annual measurements are advised.

Relative Priority:

Estimated Cost:

Comments / Notes:

4. Activity or Project: Geophysical logging of new or replacement confined aquifer wells; in combination with a comprehensive geophysical log database of the SLV.

Affected Area: Valley-wide.

Need: For refinement of aquifer layer maps and the RGDSS, there is a need for improved understanding of aquifer layer boundaries, thickness, porosity; improved understanding of the lateral extent of confining clay layers; and improved understanding of ground water quality changes with depth.

Summary of Activity:

- Initiate a rule that requires a basic suite of geophysical logs to be run in every new water well, including monitoring wells, that penetrate, or are likely to penetrate, a confining clay layer. Logs contemplated are, at a minimum, SP, gamma ray (i.e. natural gamma), and either induction or short & long normal resistivity.
- Inventory existing geophysical logs of water wells, mineral test holes, and O & G wells in the Rio Grande Basin (including tributary areas outside the Valley proper).
- Develop a central public-record database of Rio Grande Basin geophysical logs.
- Digitize the existing geophysical logs that presently exist only in paper form.

Time Frame:

- Initiate a rule: CDWR rules presently call for geophysical logging when a confining layer is penetrated. This may need to be reviewed, and revised as needed for the Rio Grande Basin.
- Log inventory, database development, and log digitizing: 1 to 2 years.
- Database maintenance and refresh: ongoing.

Desired Outcome: Make a robust database of geophysical logs available for enhanced understanding of aquifer layers, regional hydrologic changes, and water quality.

Follow-up Activity: Continue collecting and maintaining the public-record database of geophysical logs.

Relative Priority:

Estimated Cost:

Comments / Notes: HRS Water has many of the geophysical logs in the Rio Grande Basin, although many logs presently exist only in paper form. The Rio Grande Hydrogeology Study (Davis et al, 2012) discussed many of the available logs in the San Juan Mountains west of the Valley.

5. Activity or Project: Install recording equipment on existing or new confined aquifer extensometers, to monitor aquitard compaction.

Affected Area: Confined aquifer of the SLV.

Need: As described by the Water Court in the Confined Aquifer Rules case, many of the clays that comprise the confining layers are relatively undercompacted, and loss of confined aquifer head by overpumping may result in irreversible aquitard compaction and resulting land subsidence. In addition, extensometer data, combined with confined aquifer head data, may be used to improve present estimates of confined aquifer specific storage, needed for model calibration.

Summary of Activity:

- Inventory the existing 14 (of 15 total) RGDSS piezometers at which extensometer pipes also were installed in the 1999 – 2000 timeframe, and check to see if these are still viable for measurement or whether corrosion has rendered them unusable.
- Select up to three piezometer / extensometers for installation of extensometer recording equipment. Check existing ROW / permission for adequacy for extensometer equipment (e.g.. Tuffshed™- sized instrument shelters).
- Design and install extensometer recording equipment.

Time Frame:

- Inventory of extensometers and provide recommendations: 2 months.
- Design and install extensometer instrumentation: 1 year.
- Extensometer and head data analysis: initially 1 year; repeat / refresh as required.

Desired Outcome: Develop an improved understanding of the susceptibility of confining clays to irreversible aquitard compaction. Develop more accurate values of specific storage. Input to the RGDSS model as necessary.

Follow-up Activity: Continue collecting and maintaining the extensometer data, as an early warning against signs of irreversible aquitard compaction and resulting land subsidence.
Relative Priority:

Estimated Cost:

Comments / Notes: For the CWCB / CDWR, HRS designed 14 of the 15 RGDSS piezometers with jacketed extensometer pipes. These were used during the RGDSS pumping tests, and provided valuable data on confined aquifer specific storage, as well as a direct demonstration that aquitard compaction occurs during pumping. (In my opinion an opportunity was lost in 1999 – 2000, when the decision was made not to fund permanent extensometer instruments. I suspect that irreversible aquitard compaction occurred in the 2001 – 2003 time frame due to severe and unprecedented head decline, but no measurements were made. – EJH)

6. Activity or Project: Geochemical studies of ground water in recharge areas of the SLV.

Affected Area: Mountain front and rim areas that provide recharge to the unconfined and confined aquifers of the SLV.

Need: A need exists for improved understanding, identification, and quantification of ground water recharge to the aquifers of the San Luis Valley from the mountain front areas and the alluvial fan areas that rim the Valley. This is particularly true because of the difficulty in understanding how much water recharges the confined as compared to the unconfined, in areas where confining clays are thin to nonexistent. Major-ion chemistry coupled with environmental isotope chemistry can provide an improved understanding of ground water recharge.

Summary of Activity:

- Research and identify surface waters, spring waters and existing wells around the rim of the SLV, including in the mountainous areas that rim the Valley, that are conducive to chemical sampling.
- Sample each source at least once using standard collection / transport / handling protocols, and have a certified commercial laboratory analyze the samples for major anions and cations, TDS, pH, and selected environmental isotopes such as ^{14}C, ^{18}O, ^{3}H.
- Analyze the lab results, and estimate ground water recharge pathways and travel times. Also, to the extent the results allow, estimate the relative amount and rate of recharge of the unconfined and confined aquifers from the Valley-edge recharge sources. Interpret the results in light of already existing information (e.g. Mayo and Davey, 2002).

Time Frame:

- Inventory of wells, springs, streams, and provide recommendations: 2 months.
- Sample each selected source: 1 field season.
- Laboratory analysis: 1 to 3 months for the initial sampling.
- Analysis and reporting of results: 2 to 3 months for the initial sampling.

Desired Outcome: Develop a more accurate areal and depth-dependent understanding of the amounts and rates of ground water recharge, the relative magnitude of recharge to the unconfined and confined aquifers, ground water travel pathways, and the age of the ground water in storage in the Valley aquifers.

Follow-up Activity: Follow-up sampling and analysis as needed to fill data gaps.
Relative Priority:

Estimated Cost:

Comments / Notes: Major ion water chemistry and environmental isotope chemistry of ground water provides valuable data on recharge amounts, time, and preferential pathways for ground water movement. References: Mayo and Davey, Journal of Hydrogeology, 2002 and USGS, Williams and Hammond, WRI-89-4040.

7. Activity or Project: Refined clay mapping in SLV aquifer recharge areas.

Affected Area: Valley rim and alluvial fan areas that provide recharge to the unconfined and confined aquifers of the SLV.

Need: A need exists for more accurate mapping of the areas where confining clays pinch out around the rim of the SLV. This is particularly true in the Rio Grande Fan area west of US 285. Current clay mapping is approximate in some areas, and is sourced from Emery et al (circa 1970), CDWR (Moravec and Schroeder, late 1980's) and HRS Water (1999 – 2002). With many well users proposing to deepen wells upon replacement, there is a need for a better understanding of the edge of the confining clays, and whether, and how, thin (i.e. 1 to 2 foot) 'non-blue' clays affect aquifer confinement and rim-area recharge.

Summary of Activity:

- Research existing driller's logs, geophysical logs, and geologist's descriptions of water wells and test holes in selected areas along the recharge / rim area of SLV, with emphasis on the Rio Grande Fan area west of US 285.
- Develop an improved GIS database of lithologic data, with emphasis on pinch-out and extent of thin clay layers and their effect on water levels, perching, and ground water movement.
- Develop a set of detailed hydrogeologic cross-sections and/or isopach (thickness) maps of the confining clays at and near the recharge areas.
- Where data is inadequate or contradictory, locate and drill a series of geologist-observed test holes, geophysically logged to ascertain the clay layers and characteristics. (Note: this could be combined with completion of certain test holes as permanent piezometers).

Time Frame:

- GIS database development, lithologic log interpretation, and cross-section and maps development: 1 year.
- Test hole drilling, logging, documentation: 1 field season plus 3 months for analysis and documentation.

Desired Outcome: Develop a more accurate understanding of the nature and extent of thin clays at and near the edges in the recharge areas around the rim of the SLV (emphasis on area west of US 285).

Follow-up Activity: Fill data gaps with further test drilling, as needed.
Relative Priority:

Estimated Cost:

Comments / Notes: Since the onset of the 2000 + drought, there have been a number of proposed deeper well replacements for unconfined aquifer wells. Understanding of potential effects on the confined aquifer needs to be improved.

8. Activity or Project: Workshops for improved drilling contractor understanding of importance of accurate lithologic descriptions of aquifers drilled in the Rio Grande Basin.

Affected Area: Rio Grande Basin.

Need: The present aquifer mapping in the SLV and other areas of the Rio Grande Basin are highly dependent on the existing database of driller's descriptions of formations encountered in drilling. Although most drillers' descriptions are greatly improved from past years, a need still exists to educate water well contractors who are active in the Rio Grande Basin as to the geology and rock types they will encounter, and the importance of identifying thin clay layers and other formation changes.

Summary of Activity:

- Partner with the Colorado Water Well Contractors Assn. (CWWCA) and CDWR / Water Division 3 well inspectors, and develop a series of half-day to one-day workshops specifically for drillers who practice in the SLV and elsewhere in the Rio Grande Basin.
- Each workshop should be led by one or more experienced hydrogeologists, and should show rock and formation samples, and discuss the stratigraphy, structure and general extent of the formations drillers may expect to encounter in various areas in the basin.
- Develop a set of graphics and handouts for the participants.

Time Frame:

- Workshop development: 6 months.
- Workshop presentation: twice, over two years, to be presented at regular CWWCA meetings.

Desired Outcome: Develop in the licensed drilling contractors a more accurate understanding of the formations they will encounter in the SLV and elsewhere in the Rio Grande Basin, and educate the drillers on the importance of accurate lithologic descriptions.

Follow-up Activity: Refine the workshop materials and offer the workshop periodically as needed.
Relative Priority:

Estimated Cost:

Comments / Notes: In many instances, closely adjacent wells show highly contradictory lithologic descriptions. Although improvements have been seen in recent years, a need still exists for the drilling contractors to be correct and accurate in their lithologic descriptions as reported on water well completion reports.

FOLLOWING IS THE "INITIAL LIST" CIRCULATED BY CHARLES SPIELMAN – Some of the points raised were challenged, but this basic document elicited the high level of interest which led to the formation of an informal, ad-hoc, spontaneous coming together of those who felt that more substance was needed in the Basin Implementation Plan.

Cory Off, President of Senior Water Users of the Rio Grande, made a number of critical observations to this document, and his comments are included here. Since flexibility and inclusiveness are part of the process of creating this Action Plan, Cory's input, provided via this exchange, is entered into the record. This is an example of the self-correcting and mutual-learning process which has been greatly appreciated by the main compilers of this Action Plan, neither of whom claims to be a water expert. The suggestions and the constant corrections of data, concepts and ideas, we believe, show the kind of "education and outreach" generated by the work of the Aquifer Support Group. Profound thanks to Cory Off and to all other very patient participants who criticized, agreed/disagreed, edited, added and otherwise contributed to this process.

SUGGESTED TOPICS FOR INCLUSION IN RGBIP

GEOLOGY & HYDROLOGY

Prepare a comprehensive report, or several reports, regarding the geology of the RGB, aimed at "filling in" blank spaces in the knowledge of the Basin's geology.

Prepare a comprehensive report, or several reports, regarding the hydrology of the RGB, aimed at "filling in" blank spaces in the knowledge of the Basin's hydrology.

(Cory Off) This should also include the foothills and above the gauging stations(RE: Del Norte)

Based on the results of the above two studies, recommend further research and/or field work regarding the geology and hydrology of the RGB.

Prepare an inventory of the stream waters entering and leaving the Basin – location, annual range of flows, and average flows, water flow rights governing stream use, etc.

Create a hydraulic model of the ground water system in the Basin showing subsurface water input into the ground water system, water stored in the aquifers, and water flowing naturally out of the aquifers. Show ranges and average annual quantities.
Install stream gages as necessary to make more accurate the above ground water system model.

Prepare an inventory of all the significant reservoirs and reservoir sites in the Basin: capacity, possible increases in capacity, water storage rights, and other factors affecting water storage. Describe for each reservoir the use to which the water storage right, and stored water, is being put.

Obtain data and prepare estimates of the loss, over time, of stored ground water in the pertinent aquifers in each of the Basin's sub districts, due to "over pumping" for irrigation of crops.

Research the value of electronic drillhole logging and require it on all new water wells and monitoring drillholes if justified by the results.

WATER DEVELOPMENT & MANAGEMENT

Investigate the operational & economic feasibility of various methods of water development &management and select which to pursue and perfect, such as:
installing remotely-operated headgates and flow measurement instrumentation;
improving irrigation ditch diversions, restricting or preventing seepage out of irrigation ditches with the use of pipelines and ditch linings;

(Cory Off) This would change return flows and affect next door neighbors

Investigate the operational, economic, and legal feasibility of building small reservoirs, as possible new water storage facilities, at potential locations on several tributaries of the Conejos River and the Rio Grande;

(Cory Off) New storage would be post compact and under article 4. Would expanding the size of a reservoir create water stored post compact. If you store water in the winter you have eliminated the water normally paid on the compact during the winter months. Also, how would this stored water be administered and who would benefit. The stored water could be released to benefit a certain group of water rights.

Monitor and study recharge into the river and groundwater systems from various sources-irrigated fields, city wastewater systems, and industrial installations; install equipment to control this recharge to maximize beneficial results to the water systems;
Investigate the feasibility and cost/benefit of constructing one or several low retention dams in the Conejos River or Rio Grande.

(Cory Off) Would the state allow this. How would this effect return flows?

FARMING & RANCHING OPERATIONS

Conduct a comprehensive and in-depth study of the economy of the RGB, with emphasis on the agriculture industry, as part of the basis for recommending changes or modifications in farming and ranching operations in the Basin.

(Cory Off) Would this include the economic tooling needed by the sub districts? At this time it is imperative that we conduct an economic study. This should start at the sub district level and create the tools needed to understand setting pumping fees. Include cause and effect of estimated surface water, commodity prices, etc. Also, the study should include the study of alternative ag uses for water. An example would be large scale greenhouses. They would use

a very controlled quantity of water, less evaporation, and have an added value for the produce grown. Also, we are within a one days travel from many large cites. The front range to Dallas, New Mexico and Arizona.

Continue investigation of the benefits of reducing agricultural water use resulting from different farming and ranching methods;

Develop & settle on more accurate determination of the water demand and consumptive use of various farming and ranching practices – by crop, location, and situation;

Develop estimates of the acreage reductions indicated in each sub district necessary to maintain or restore water storage in the aquifers affected;

(Cory Off) Why is this not happening now? This should be part of the economic study.

Initiate a program of continuous and wide-spread searches for new crops to experiment with to reduce water use and/or increase farm income while holding water use constant;

MUNICIPAL & INDUSTRIAL CONSIDERATIONS

Provide a data base and guidance for RGB towns as they move to deal with shortcomings and problems in water supply and waste water systems.

Continue to study data regarding municipal and rural residential water requirements and consumptive use.

Study and compare the costs and benefits of industrial/commercial water demand and consumptive use vs. agricultural water demand and consumptive use;

Encourage and support new industrial/commercial projects, especially those that are efficient and/or low in water use, or which are careful to protect ground water quality;

ENVIRONMENTAL & RECREATION CONSIDEREATIONS

Conduct a comprehensive study of water storage, stream flows, and water rights dedicated to environmental and recreational purposes in the RGB;

Conduct a comprehensive study of the dramatic decrease in bird populations in the RGB in the past 50 years; attempt to determine the cause of the decrease – farming practice? Pesticides/weed killers? Lack of surface water? Lack of suitable habitat? Predation?

(Nicole Langley) Plenty of ornithological resources exist. Rather than starting from scratch, let's instead host a series of public talks on various topics. We would host a workshop or panel discussion and invite bird-watchers and avian experts. Folks appreciate the Roundtable as a place to learn about different issues, so we could help them do more of that.

Study and compare the costs and benefits of environmental water demand vs. agricultural and industrial water demand;

Search for and undertake projects designed to increase or enhance the environmental or recreational benefits of RGB water use.

WATER SUPPLY & RIO GRANDE COMPACT CONSIDERATIONS

Continue the current experiment of using radar and other data to improve river flow forecasts necessary for RG compact administration. Install that methodology permanently if it proves successful;

(Cory Off) This should include lidar to estimate snow packs. This technology comes out of Jet Propulsion Laboratory in California.

Improve the estimates of the costs associated with inaccurate forecasts of river flows in the RGB.

(Cory Off) Currently funding for the snow courses is a battle. Who would pay for more accurate forecasts?

Initiate and continue discussions, or perhaps negotiations, with New Mexico and Texas regarding the water savings (from reduced evaporation) that could result from storing RG water (in reservoirs or in aquifers) in Colorado instead of in Elephant Butte Reservoir in NM;

Insure that all existing RG reservoirs have been improved to allow storage at their maximum legal/operational capacities;

Review the current status of feasibility studies of bringing water west to Colorado from the Missouri-Mississippi drainage and decide whether to support further study, as proposed by other basins.

Examine the feasibility of transferring water from the SJB to the RGB – by transferring water rights, or by leasing water if available from the SJB,

* * *

SPECIAL THANKS TO ALLEN DAVEY – For patient and knowledgeable input and his willingness to critique numerous drafts.

SPECIAL THANKS TO JIM EHRLICH – for his consideration, suggestions, input, and valued cautions and critiques.

* * *

PUBLIC INPUT ITEM 8

METRO MAYORS CAUCUS
WORKING TOGETHER FOR A BETTER REGION

MEMORANDUM

To: The Honorable John Hickenlooper, Governor of Colorado
James Eklund, Executive Director, Colorado Water Conservation Board

From: Sue Horn
Metro Mayors Caucus, Chair
MMC Water Committee Chair
Mayor of the Town of Bennett

Date: September 4, 2015

Re: Colorado Water Plan — July, 2015 Draft
Consensus Comments and Recommendations

The Metro Mayors Caucus (MMC) is a voluntary association of the mayors of 41 cities in the 7 county Denver metro region. MMC members have worked on a variety of issues for 23 years, developing and implementing collaborative solutions that make this region a better place to live and work. Our approach to the Colorado Water Plan continues our practice of seeking out common ground and building support among our colleagues for the action needed. We want to be your partners in the creation and implementation of a Colorado Water Plan that works for all Coloradans.

To that end, MMC created a Water Committee in January 2014, to investigate water use and availability in Colorado. This Committee spent the last 18 months gathering information, reviewing the drafts of the plan, and sharing their conclusions with all of the mayors. The comments and recommendations attached represent the consensus of MMC's membership, and signal our intention to play an active part in ensuring that Colorado economic health and quality of life never suffer for lack of available, accessible, quality water.

Thank you for the opportunity to share our comments and recommendations, and thank you for initiating this important plan and process.

Metro Mayors Caucus
Consensus Recommendations Regarding
The Colorado Water Plan

Introduction

The Metro Mayors Caucus (MMC) is pleased that Colorado is creating a statewide water plan and that we can play a small part in the planning, and subsequently, in the equitable implementation of the plan. The shared responsibility of all Coloradans for our water future, as reflected in this document is a key to its ultimate success, and we want to contribute to that success.

The 7 county Denver metro region has a population of roughly 3 million people yet consumes around 8% of the water used in Colorado in all sectors and basins. And the region has demonstrated the highest levels of water conservation of any region in Colorado. Nonetheless, MMC takes our obligations under the Colorado Water Plan (CWP) very seriously and know that we have key roles to play to ensure that the CWP is, and remains relevant and effective.

The Denver metro region is important to Colorado as the main economic engine of the state, generating a GDP in excess of $180 billion, approximately 60% of Colorado GDP. Our economy and our quality of life are entirely dependent on reliable supplies of water. Whether it is for drinking water, industrial processes, healthy natural habitats and environments, outdoor recreation, agriculture, or any other beneficial uses, in a high desert water is everything.

MMC members understand that without a balanced approach and the active involvement of people in all parts of Colorado, we will not have enough water to meet our needs by 2050. Without a dynamic, statewide water plan we will not be able to address changes in population, climate, and other impacts on available water in Colorado as they occur.

MMC created a Water Committee in January, 2014 at the urging of many of MMC's member mayors. The Committee accepted the charge to explore a comprehensive list of issues related to water in Colorado and to track the development of Colorado's first state water plan, initiated

by Governor John Hickenlooper in May 2013. The Committee received numerous briefings on such issues as:

- the complex legal framework governing the beneficial use of water in the state,
- the history of Colorado water development and use,
- the impacts of technology on water conservation,
- the challenges posed by climate change,
- the environmental constraints on water use and storage, and
- the significant gaps in water availability given forecasts of future demand.

The committee welcomed guest presenters representing a variety of interests and perspectives, including: municipal water agency staff, hydrologists, environmental experts, farmers, water and irrigation district officials, and experts from CWCB and the Governor's policy office.

The discussions and presentations led the Committee to identify several water related topics and issues of greatest interest to MMC members and their communities. Those areas include:

- The need for intensive public education and engagement in the implementation of the CWP,
- New conservation strategies to enhance current savings, practiced and shared across all basins and sectors,
- Reuse where possible and practical,
- Land-use policies and practices that enhance and promote water savings,
- Storage options including aquifer recharge,
- Monitoring and advanced planning for the impacts of climate change,
- Methods to evaluate the success of various strategies,
- Maintaining a wide variety of options for future water supplies for the metro region.

We have shared these issues with all of our members and a robust discussion among mayors and city staff resulted in our consensus support for the comments and recommendations that follow. We hope that our input will play a constructive role in strengthening the Colorado Water Plan.

I. General Sentiment of the Caucus

1. ***The Colorado Water Plan must be written in such a way as to engage all Coloradans using language that encourages statewide collaboration and avoids unnecessarily elevating conflicts between and among basins.***

Several places in the document, the language emphasizes the need for Coloradans to work together in meeting Colorado's water needs in the future. On page 5 the statement is extremely clear, *"Colorado's success depends on the ability of all regions to work collaboratively to solve challenges."* MMC agrees with this sentiment completely. It is first offered as the opening to the second paragraph on page one: *"This plan articulates collaborative, balanced water solutions to Colorado's water challenges."* Yet only a little further down the page we find a list of items that the author describes as, "unacceptable to most of us." The language in the draft Plan is as follows:

> We have used the real and looming "gap" between water supply and demand to catalyze action on water in Colorado. The trade-offs in addressing this gap, if we do nothing or if we continue the status quo, are unacceptable to most of us:
> - Continued rapid removal of water from farms and ranches to supply urban growth.
> - *A blind hope that basin economies, watersheds, and ecosystems can withstand more water diversions.*
> - Continued mining of groundwater aquifers to supply municipal growth.
> - *Populations striving to recreate the water-intensive landscapes of the Eastern U.S. instead of adopting a Western water ethic.*
> - Regulatory processes for critical water storage projects that require increasingly impracticable amounts of time and money.
> - Diminished ability to resist federal government intervention in state water management decisions because we've weakened state management tools.
> - Transactional costs that prohibit efficient and effective water sharing.
> - Water laws and administration that are out of touch with our changing needs.
> - Dogmatic views of water law that position the State of Colorado as the sole obstacle to changes in water use.
> - No plan to finance the daunting cost of water infrastructure projects (municipal, industrial, and environmental).

Statements calling for balance and collaboration are welcome but there are two bullets underlined above that seem to be direct attacks by the author on the South Platte Basin Implementation plan. The second bulleted statement implies that the efforts that cities and water suppliers have used to plan for water supply projects is based on "blind hope" instead of careful analysis. It also implies that there shouldn't be any more water diversions, because economies, watersheds and ecosystems can't withstand such diversions. This despite the widely held conclusion that under any reasonable scenario, water diversions will be needed to meet future demands. The fourth bulleted statement implies that it is wrong or "unacceptable"

for the residents of the Metro area to value the Metro area's urban environment. The vast majority of the state's population (on both sides of the continental divide) live in and enjoy urban environments, and such environments are a significant driver for the vibrant, productive economies that have developed in and around urban areas. The Plan itself recognizes "the vital importance of urban landscape and its benefits, including improved air quality, surface water quality and groundwater quality, increased property values, aesthetics, and general quality of life" (Page 82), and that "healthy urban landscapes enhance the livability of a city or town and are a crucial asset for urban populations" (Page 86), but doesn't reconcile that information with the statement that this urban landscape is "unacceptable to most of us."

Another example of overreach in the document is in the appendices, we particularly take note of the Draft Conceptual Agreement where it is stated that, "All proponents of new M&I water projects should meet high conservation standards" (Appendix D, page 9). The Metro Roundtable and the MMC have identified water conservation as something ***all*** water providers and users must actively pursue, and believe that "low" to "medium" conservation levels, which include incentives and moderate regulations, result in significant savings and are likely achievable, but achieving "high" conservation levels will require strict water use mandates that many Front Range water suppliers believe won't be accepted by most of their water users. The Metro Roundtable's approach has been to continue to push for as much conservation as is reasonably achievable, but because achieving more than "medium" levels is far from a certainty, water planning should not be based on an assumption that "high" levels will be achieved. To set the bar at "high" levels, and to not allow water supply projects to proceed until such levels are achieved, will certainly leave the state short on water supplies since it takes decades to bring on such new supplies.

The MMC Recommends:

- *Removal of the combative statements from the introduction and replacement with more balanced and collaborative language, for example:*
    - *Replace the second bullet, "A blind hope that basin economies, watersheds, and ecosystems can withstand more water diversions," with, "Strict reliance on new trans-basin diversion as a reliable source for future Front Range supply rather than as an element of a balanced portfolio;"*
    - *Replace the fourth bullet, "Populations striving to recreate the water-intensive landscapes of the Eastern U.S. instead of adopting a Western water ethic," with, "Continued use of high water consumption plantings in municipal and industrial*

landscaping and water intensive crops in agriculture, instead of landscape and crop selection more appropriate to our high desert climate."

- *Amendment of the Draft Conceptual Agreement to allow medium conservation standards for water suppliers proposing new supply projects and absolute clarity that any application of strict water conservation standards must be applied equally statewide and not only in Front Range urban environments.*

2. ***The Colorado Water Plan must be a dynamic, living document, with the broadest possible reach into the multitude of factors contributing to water use and availability in Colorado and downstream.***

Many of the factors used to forecast gaps between demand and available water in Colorado are themselves volatile. Fluctuations in population, economic conditions, and environmental factors, including but not limited to weather, all interact to impact the health and adequacy of our water supply. Implementation of the CWP has to include mechanisms for monitoring and evaluating external factors as above, and internal factors relating to water management strategies in general, and CWP implementation in particular. Clearly this role is well played in Colorado by the Department of Natural Resources, but we expect there will be significant new demands placed on them that must come with additional resources. Continued engagement of key stakeholders with some regularity must also be a part of the evolution of the plan over time.

The MMC recommends:

- *The MMC supports the work of the South Platte Basin and Metro Roundtables. We appreciate their recommendations related to the 11 strategies contained in the South Platte Basin Implementation Plan, and are supportive of most. Caucus members have concerns about several of these:*
    - *Support for completion of IPPs in the basin must hinge on consistency with the values in the CWP*
    - *New trans-mountain diversions are not universally supported within the Caucus but must be retained as an option for the future.*
    - *Environmental use and recreation use are linked because they are non-consumptive uses but they are equally important and should be addressed separately, and environmental implications of all actions proposed under the Plan must be thoroughly and objectively evaluated and understood and appropriate mitigation standards must be in place.*

- *The CWP should recognize the costs associated with regular data collection and plan evaluation, and include strong recommendations that the Governor and the General Assembly support the Colorado Department of Natural Resources' efforts to closely monitor and evaluate Colorado's available water supply and variables in demand to maintain an updated forecast, and an effective CWP;*
- *The MMC supports the use of the scenario planning approach as the only sensible way to build in the flexibility that the CWP will need, but we want to reiterate the dependence that this approach will have on comprehensive monitoring discussed above;*
- *The CWP should address the growing linkage between the availability of water for municipal use and the quality of raw water supplies. Water quality and water quantity are inextricably linked issues and strategies to address them must be integrated in the CWP;*
- *Conversion of water from agriculture to municipal use will continue but should be moderated with a variety of mechanisms such as interruptible supplies and other medium term strategies — the CWP should include provision for ongoing research and evaluation of strategies to implement alternative transfer methods.*

3. Colorado's entitlement to waters under interstate compacts must be protected

Colorado is signatory to nine interstate water compacts and subject to two US Supreme Court Equitable Apportionment Decrees that regulate how much of the waters that rise in Colorado must be delivered to the borders for the benefit of other states and Mexico. Care must be taken that the balance available for use in our state is not eroded by the actions or inaction of other states or by Federal agencies.

- *The CWP must be written to secure future beneficial uses of all the water Colorado is entitled to, and protect those Colorado water supplies under the interstate compacts by identifying a continuum of future water uses that of will require Colorado's full entitlement.*

II. Engagement of the Public

The CWP must be accompanied by a comprehensive communications and education initiative.

Many of the solutions and actions that will emerge from the plan will likely include new or additional development and building regulations, new restrictions on water use, or other actions requiring changes in behavior. If Coloradans do not understand the critical reasons for undertaking such changes, the resistance will be extremely problematic for local leaders charged with implementation. When fully informed, Coloradans are willing to consider tough trade-offs, but without good information many are unlikely to trust the need for change.

The MMC recommends:

- *Basin-wide: Strong support for the recommendation of the South Platte Basin Implementation Plan to "Facilitate effective South Platte communications and outreach programs that complement the state's overall program;"*
- *Statewide: Coloradans must understand that there is a serious, persistent and growing problem with water in Colorado that can only be solved with their support and cooperation. A comprehensive communication initiative is needed to help Coloradans understand the fragile nature of Colorado's water supply in a high desert during climate change, and how recommended actions will enable us to maintain our economic health and quality of life. The initiative should provide information including but not limited to the following:*
    - *Overview of the situation and the CWP in clear and understandable language,*
    - *Explanation of the range of impacts on local communities,*
    - *Demonstration in layman's terms of the size of the gap for the locality (where data is available),*
    - *Provision of data regarding current per capita consumption in each basin,*
        - *Broken out by sector,*
    - *Description of categories of water uses and percentages by basin and sector,*
    - *Targets for per capita consumption given known/forecast available supply,*
    - *Information on conservation, land-use and other strategies proposed and impact on per capita consumption,*
    - *The national context for pricing, per capita consumption, and the impacts of rising prices for water on the agriculture economy in the state.*

III. Land-Use and Water Conservation

The CWP must provide strategies and incentives for statewide reduction of municipal & industrial demands through active and passive conservation methods, and comprehensive investigation and broad application of conservation best practices.

Although municipal & industrial use of water in Colorado is less than 12% currently, it is the fastest growing use in the state. Taking steps to reduce M&I demands must be a key part of the CWP. Conservation is key to achieving this goal. The metro region has shown that given good information, Coloradans will take significant steps voluntarily to save water. In 2003 water suppliers and users combined to reduce consumption in the Denver region by 30% in response to a comprehensive public information campaign and a robust collaboration among cities and other water suppliers. As new water conservation strategies are introduced, these practices

must become permanent, and not simply viewed as short term crisis response. To facilitate local leadership on water conservation, we need better data and a better understanding of how land-use decisions are affecting water consumption. As stated in the plan, local government in Colorado is empowered to determine where growth occurs, how it occurs, and how much water that growth will need. We believe that conservation goals should be achievable, and apply uniformly across the state.

The MMC recommends:

- *Identification of specific strategies—voluntary and mandatory—for changes to land use practices, building codes, density, landscaping requirements, low flow fixtures, and other elements impacting water use:*
    - *Include or reference data and metrics on water consumption associated with different land use types, densities, and patterns so development proposals can be accurately evaluated regarding water use;*
    - *Include or reference options for landscape restrictions and incentives to reduce irrigation demands in municipal use;*
    - *Recognize that every jurisdiction will apply a variety of strategies based on community water supply and that different development patterns and regulations may be needed in different communities;*
    - *Despite variations between communities, conservation targets must be applied statewide;*
- *Definition of per capita and other water use targets as part of the plan to reduce the gap:*
    - *Water use targets should apply to every basin and sector, and compliance should be monitored and shared;*
    - *Water use targets should distinguish between residential, commercial/industrial, and agricultural uses;*
    - *Targets should be achieved by a date certain;*
- *Recommend best practices for commercial and industrial use and restrictions;*
- *Recommend proven water availability for new developments:*
    - *Set period of years for availability test;*
    - *Criteria for reliability/accuracy of source data and assumption in water availability plan;*
- *Conservation best practices research should be continuously updated and widely shared:*
    - *Continue to add to the Best Management Practices adopted by CWCB,*
    - *Research and develop best management practices for supply side conservation.*

IV. Storage

The CWP must include strategies for a variety of new storage options including storage of in-basin supplies and trans-basin supplies.

However low the average supply of water in Colorado may be over a period of years, there will always be weather events that will send flows in excess of downstream requirements out of Colorado unconsumed. The CWP should ensure that any and all reasonable options for small or large storage projects and programs are explored and evaluated for implementation.

The MMC recommends:

- *Strong support for the recommendation of the South Platte/Metro Basin Implementation Plan to "Promote multi-purpose storage projects that enhance other South Platte Basin solutions;"*
- *Give priority to projects that eliminate/mitigate environmental impacts;*
- *Give priority to multi-jurisdictional, collaborative programs and projects;*
- *Research and implement control and administrative solutions to alluvial aquifer storage techniques to maximize these storage opportunities and minimize environmental impacts from other storage options*
- *Explore feasibility of hydropower to provide revenue for storage projects.*

V. Climate Change

The CWP must include strategies for monitoring the impacts of climate change on water availability and demand forecasts.

Accurately forecasting the impacts of climate change is not possible so efforts to monitor the effects very closely will be critical.

The MMC recommends:

- *The CWP must utilize the best climate science available to analyze and forecast available water supplies;*
- *Regular evaluation of the assumptions used to develop demand forecasts, for example:*
    - *Length of growing season;*
    - *Evapotranspiration rates;*
    - *Changing precipitation and runoff patterns;*

- *Other indicators should be identified to provide the best correlation between climate and water supply.*
- *Significant deviations from forecast assumptions detected by this monitoring should trigger a CWP update process.*

PUBLIC INPUT ITEM 13

FROM: Brett Bovee, WestWater Research

Greetings and I enjoyed reading the 2nd draft of the CO Water Plan. Admittedly, I did not read the Plan in its entirety, but nonetheless I thought I would provide both praise and criticisms.

1. Chapter 10 is a huge improvement and is what I consider to be the real contribution to the water conversation in CO. I would encourage CWCB to focus most of their efforts on this Chapter 10 as they create a Final Plan. The background information is interesting and necessary, but is not the fundamental role of this water plan. So, good on you for laying out action items and I would encourage the development of more specific and direct actions for the Fina.

2. The State's role here is an interesting concept that you have definitely touched upon in both the Plan text and media outreach. The State wants to promote local management of water resources, which is the foundation of the Basin Implementation Plans - let local basins decide how they want to manage the water. This works so long as there is broad and diverse participation in the BIPs - so one of the State roles is to encourage, or actually ensure, broad and diverse participation in the Basin Roundtables - which should continue indefinitely.

3. Criticisms have been lobbed at CWCB for not making the tough decisions in this Plan - but I would argue that it is NOT the State's role (as the executive branch, or CWCB) to make all of these tough decisions. There is no desire to have regulated water allocations. So how will these decisions be made? I would argue that the citizens of CO will make these decisions through an imperfect and unclear economic process. Markets (for water, for hay, for commodities, for land and real estate) will drive a lot of decisions, as they have for generations. So, it might be obvious, but I see the State role as participating in this market and regulating this market to protect the commons (environment, water quality, other broad social benefits). Participating in the market might involve development of local districts within the Basin Roundtables to purchase water rights on a voluntary basis to achieve certain goals. Funding of these local districts would have to be local. A model of this is being dreamed up by the Poudre River working group. Participating might also mean developing a mitigation fund and "redevelopment" process for rural communities when water is transferred out of them. Regulating water markets is already done through Water Court, and reducing regulation is more of what is needed.

4. There have been several recommendations, through the ATM grant projects, to increase the flexibility with which water can be transferred on a temporary basis without the status quo Water Court review. I echo these recommendations. If you look in the Western U.S. - other states have dealt with water supply deficits by increasing flexibility of water transfers. Examples are found in CA, TX, AZ, OR, and ID. It is the CO Legislature's role to pass such reforms, but CWCB can help by articulating in this Plan about why such flexibility is needed for the future of CO, and recommend a Water Court or regulatory process by which such flexibility could be achieved.

5. One of the underlying problems that is stated in the Water Plan is the

"buy and dry" of agriculture. So a follow up question is - why is "buy and dry" bad? The common response is Crowley County which shows that the rural economy can suffer greatly when water is removed. Another response is the preservation of both the aesthetics and environmental benefits of farming and ranching. The reality is that "buy and dry" will continue to occur on a voluntary basis for a variety of individual farmer and larger economic reasons. The best tools that the State has to counter both the amount of "buy and dry" and its effects are:
(1) reduce the water demands of NEW housing developments (urban water uses continue to drop and are likely not to be the primary driver of M&I water use in the future - that distinction lies with growing towns and cities who are growing onto the surrounding agricultural lands). Require developers to review landscape plans and report annual water use costs for different landscapes - basically encourage xeriscaping and removal of unused turf areas using cost drivers for developers.
(2) provide mitigation and state assistance for rural communities affected by water transfers to develop diverse economies in addition to irrigated agriculture.
(3) encourage more flexible water transfers that would allow both more frequent annual leasing and longer-term lease arrangements without impacting the base water rights of the farmer. There are LOTS of efficiency improvements that could be made in agriculture, but there is a disincentive to making those improvements - so the State should take an active role in removing those disincentives and provide capital to farmers to make the improvements to facilitate a water lease to other uses.

Again, I applaud the CWCB for embarking on this Plan and more specifically for laying out some planning action items in Chapter 10. I think you know that you will not appease the water community in CO with a Plan like this, and perhaps people forget what the State role should be in addressing some of the tougher water questions that CO faces. I offer these comments as advice on what I think would improve the Plan and the overall conversation about water.

Good luck!!
--Brett

PUBLIC INPUT ITEM 21

WATEREUSE COLORADO

Advocating legislation and regulations which facilitate appropriate water reuse, promoting safe and effective reuse throughout Colorado, and improving public understanding of water reclamation.

September 10, 2015

James Eklund, Director
Colorado Water Conservation Board
1313 Sherman Street
Denver, CO 80203

Re: WateReuse Colorado Comments on the July 2015 Draft Colorado Water Plan

Dear Director Eklund:

WateReuse Colorado is the state section of the national WateReuse Association. WateReuse Colorado is comprised of a broad range of reuse professionals, including the state's preeminent voices in water reuse – municipal water providers, users of recycled water, engineering consultants, researchers, and others. Our primary objectives include supporting the mission of the WateReuse Association[1], advocating legislation and regulations that facilitate appropriate water reuse, promoting safe and effective reuse throughout the state, and improving public understanding of water reclamation. As such, we greatly appreciate this opportunity to provide input on the July 2015 draft of Colorado's Water Plan (Water Plan or Plan). We also had the opportunity to provide input on the earlier April and December 2014 versions and thank you for incorporating many of our comments into the current draft.

We commend you and your staff for the work you've done to develop a comprehensive and meaningful document to guide the state's water future. Increased reuse is clearly recognized as an important component of a suite of strategies necessary to meet Colorado's current and future water demands. The Plan includes helpful background on water reuse, treatment technologies, regulations, research, existing and planned reuse projects, and what other states are doing on the forefront of reuse. The Water Plan also identifies issues that must be addressed and includes well-developed key Actions to be taken to facilitate, incentivize and fund additional reuse in Colorado.

As we've noted in our past comment letters, we appreciate the Water Plan's recognition that "Widespread development of potable reuse will be an important facet of closing the future water supply-demand gap." Indirect potable reuse (IPR) is already being practiced in a few prominent projects

[1] WateReuse Association Mission: To advance the beneficial and efficient uses of high-quality, locally produced, sustainable water sources for the betterment of society and the environment through advocacy, education and outreach, research, and membership.

in Colorado. While direct potable reuse (DPR) is not in use in Colorado to date, several full-scale and pilot projects have been or are being implemented in Texas, New Mexico and California. There is an unequivocal trend toward DPR, with technologies, research, regulatory development, and on-the-ground operational experience all supporting its rapid expansion. Potable reuse addresses many of the limitations of nonpotable reuse (e.g., seasonality of demand, additional networks of distribution piping to construct and operate, etc.). While not without its own challenges, we can clearly envision a day within the Water Plan's planning timeframe where IPR is greatly expanded and DPR is a commonplace tool for meeting Colorado's future water needs.

As you prepare to finalize Colorado's first Water Plan, we hope you will incorporate the following comment, which we believe is important to ensuring Colorado is well-positioned to optimize municipal reuse to help meet future demands. In addition, we are attaching a redlined version of reuse sections of the Water Plan with suggested edits.

Expand reuse language to include both "regional" reuse and support of continued implementation of local solutions – The range of Actions described in Section 6.3.2 Reuse of the draft Water Plan are designed to advance reuse in Colorado along a variety of fronts. However we are concerned that a focus on "regional reuse" has emerged potentially to the detriment of many reuse opportunities that may not be "regional" in nature. We strongly recommend that the Water Plan language be expanded to clearly incorporate and support the continued implementation of more localized, utility-specific reuse – such as nearly all existing reuse in our state – which will be important to meeting future water demands.

To illustrate this concern, a current Critical Actions heading in Chapter 10 reads "Encourage Reuse: Encourage the development of *regional* reuse solutions to maximize fully consumable water supplies [italics added]." Similarly the first Action under that heading reads "Conduct a technical review of *regional* reuse options and provide grants to support *regional* reuse plans and projects [italics added]." While regional solutions are important and should be supported, we are concerned that only identifying regional projects in Water Plan Critical Actions without *also* recognizing the importance of more local reuse solutions could undermine the intent of maximizing reuse of fully consumable water supplies.

Colorado should indeed encourage and support collaborative regional reuse solutions such as the Water Infrastructure and Supply Efficiency (WISE) Partnership between Aurora Water, Denver Water and South Metro Water Supply Authority, which will be crucial to meeting future water demands. However it is important that the Colorado's first Water Plan also support and encourage more local reuse projects, which constitute the vast majority of existing reuse projects in the state. Most reuse in Colorado is currently undertaken by individual water treaters via exchanges of reusable return flows, reclaimed water permits, and in a few cases, by re-diverting returns flows after they have first been discharged to a stream. For many water treaters, participation in a regional solution may not be feasible or their best option for them to optimize their reusable supplies. If the intent of the Water Plan is to encourage additional reuse, both regional reuse opportunities *and* more localized, utility based reuse will be critical and should be supported.

Summary

We thank you and your staff for developing a Colorado Water Plan that recognizes the important role of reuse and that is committed to facilitating additional reuse to help meet our current and future demands. We welcome any questions or comments and would be happy to provide additional information as appropriate.

Again thank you for this opportunity and for your leadership in developing a Water Plan to guide Colorado's future.

Sincerely,

David Takeda, P.E.
President

Attached
WRCO Recommended Water Plan Edits

WateReuse Colorado

Recommended Water Plan Edits

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Actions

1. **Explore regional and expanded local reuse options:** Over the course of the next three years, the CWCB will conduct a technical review of regional reuse options in addition to the ongoing implementation of local reuse solutions and provide grants to support regional and local reuse plans and projects.
2. **Improve quantification, planning and tracking for potential reuse projects:** Over the next two years, the CWCB will conduct more research on how much water is currently being reused, how much potential there is for reuse, and how much water providers plan to reuse. As a future planning effort, regional reuse plans and projects should be explored to use economies of scale. As part of this work, the CWCB will work with partners to map all wastewater and potable infrastructure, water rights, needs, cost, and benefits to assess feasibility of potable reuse projects in Colorado. In addition, potential impacts to return flows will be examined.
3. **Clarify the regulatory environment:** Over the next two years, the CWCB and the CDPHE will work with stakeholders to examine the application of water quality regulations to reuse water to identify potential change that fosters permanent growth in the reuse of limited water supplies and that protects public health and the environment.
4. **Provide financial incentives for reuse innovation:** As recommended in the DPR white paper, over the next year, the CWCB will proactively seek applicants to use WSRA grant funds for expanded research and innovation related to the technical challenges and solutions of reuse. This includes exploring areas such as ZLD, IPR, and DPR, examining regional opportunities, increasing the reliability of the technology, on site reuse of water, development of reuse water for food crop irrigation, and the ability to share reuse water. Such research also includes support for continued development of more cost-effective and environmentally acceptable RO concentrate management techniques and the evaluation of non-RO based treatments capable of producing water suitable for DPR.[191]
5. **Encourage the Examining Board of Plumbers to adopt the International Plumbing Code to allow for graywater.** The CWCB will encourage the Colorado Plumbing Board to adopt and incorporate the appropriate graywater provisions from the chapter or appendix of the International Plumbing Code to allow for graywater piping within structures.
6. **Expand loan programs:** The CWCB will explore expanding its loan program to include loans for ~~innovative or regional~~ reuse projects. The DNR will work with the General Assembly to institute this modification during the 2016 legislative session.
7. **Support reuse education:** As recommended in the DPR white paper, the CWCB will support stronger education to describe the benefits of reuse water as an integral part of a water supply system for the potential of reuse to be fully realized. Specific recommendations are to sponsor a survey of Colorado utilities and water agencies to determine the extent to which DPR may be considered as a means to augment their legally reusable water supply portfolios and to develop a program to educate the public, elected officials and water utilities about the benefits and safety of DPR.[192] More detail regarding specific education and outreach recommendations are detailed in Section 9.5.
8. **Examine mechanisms to improve the ability to market, sell, and share reusable supplies:** Through a stakeholder process, the CWCB will investigate mechanisms to better allow for reuse water to be marketed to water providers outside a service area and could make building a reuse project more desirable.

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b. Assess Funding: Assess funding needs across multiple sectors using the BIPs and other resources as a guide (e.g., municipal, environmental, industrial, recreational, agricultural, conservation, reuse, education and outreach, among others).

Critical Actions to Encourage Reuse	Section	Partners	When	Type
1. Develop a sustainable funding plan that integrates a guarantee repayment fund, green bonds, and additional support grants and loans for the Water Supply Reserve Account (WSRA), education, conservation, reuse, alternative transfer methods (ATMs), and agricultural viability.	9.2	CWCB & Funding Committee	Near-term	Process

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b. Encourage Reuse: Encourage the development of ~~regional~~ reuse solutions to maximize fully consumable water supplies.

Critical Actions to Encourage Reuse	Section	Partners	When	Type
1. Conduct a technical review of local and regional reuse options and provide grants to support both local and regional reuse plans and projects	6.3.2, 7.3	CWCB, water providers, reuse experts	Near-term	Programmatic
2. Examine the amount of water being reused, the potential to increase reuse, and the amount of water providers plan to reuse.	6.3.2, 7.3	CWCB, water providers, stakeholders	Near-term	Programmatic
3. Improve the regulatory environment to foster permanent growth in the reuse of ~~limited~~ water supplies, while protecting public health and the environment.	6.3.2, 7.3, 9.4	CDPHE, CWCB, stakeholders	Near-term	CDPHE policy, potential legislation
4. Proactively seek applicants to use WSRA grant funds for expanded research and innovation related to the technical challenges and solutions of reuse.	6.3.2	CWCB, BRTs, reuse experts, water providers	Near-term	Programmatic

PUBLIC INPUT ITEM 28

September 14, 2015

Colorado Water Conservation Board
Attn: James Eklund, Executive Director

Dear Mr. Eklund: Re: Colorado Water Plan Comments

Montrose County believes the Colorado Water Plan can be a positive influence in the protection and development of Colorado water resources. The Plan should include realistic and measurable goals. Identification of financial resources is an integral part of the plan and should be stated clearly in the Plan. Conservation is expensive and agriculture is identified as the main source of water for future growth. Municipal acquisition of agricultural land and the attendant water rights has not proven to be the best practice for development of domestic supply. The Plan calls for paid fallowing and temporary leases of agricultural water to fill supply gaps. Fallowed land does not support local economies and does not lend itself to the vitality of the agriculture community that is sending water to other uses such as domestic use either upstream or downstream.

Economic health is a goal of all communities around the state. Meeting shortages that are identified in the agriculture sector of Colorado is critical to the future of Colorado. The production of food and fiber will only become more important as more and more people come to the state. Protecting agriculture is a stated goal in the plan and the population of Colorado has stated that these values are important to the quality of life in Colorado. We think that improvement to the irrigated agriculture industry will create great benefits to the state not only in agriculture but to the health of the environment and the recreation industry.

It is our belief that investment in lining and piping of aging infrastructure along with investment in efficient water use will allow Colorado agriculture to remain viable into the future. These investments coupled with the current federal programs for agriculture modernizations could meet the demands that are currently stated in the Plan. Conservation is not simply shutting down a head gate and letting water flow downstream to other users.

Colorado can and should become more efficient with delivery and application of water to the agriculture industry state wide. Piping laterals and lining canals along with systemized irrigation is an investment that can and should be made for the future of Colorado. Water saved through improvements to conveyance systems and on farm deliveries benefits all of Colorado. The money spent on a new Trans mountain diversion will approach the billion dollar mark. The cost per acre foot for improvements will be a fraction of the cost for new trans mountain facilities. Rather than investing in new trans mountain diversions we suggest that these funds be invested in improving the delivery and application of water to the lands that are currently being irrigated in the state.

Water banking should be accomplished in the reservoirs that are in the State of Colorado rather than in downstream reservoirs. Conservation of Colorado water stored in Colorado reservoirs will allow the filling of these reservoirs that will benefit not only Colorado but the states that depend on the waters from the rivers that flow out of the state. Water banking should be defined by the building of new reservoirs in Colorado not simply moving water from one place to another. Water banking by moving water from one place to another is only a temporary fix and creates losses in the community that sends its water to other areas. If we lease water to be left in a stream so others can continue living like they have since the 1950's we are only postponing dealing with the problem. Water banking should be about storage not about flows. The danger of allowing water to flow to other places is how we get it back when those flows are depended on by the recipient community. Either in state or out of state the recipient community shows their need and demand while the sending community will be hard pressed to show the need and demand after water passes by their diversion structures.

Reservoir storage at high elevations creates more options for the water and provides for more non-consumptive use of the waters that are flowing out of the state currently. Minimum stream flows are accomplished by reservoir releases as evidenced in the Black Canyon of the Gunnison. Stored water has value and as we go into the future that value will only increase. Water on hand has great potential. That potential should belong to Colorado. We feel the best answer for the future shortages is build more dams and store the water saved by improvement to delivery and conveyance systems.

Adherence to Prior Appropriation Doctrine principles is important to the development of water resources in the State of Colorado. Dependence on senior water rights to protect junior water right holders weakens the Prior Appropriation Doctrine. The Plan should be working on ways for the junior water right holders to determine what amount of water they can generate before a request is made of the senior rights to curtail their diversions in a time of shortage.

Senior rights are held by agriculture and with a concentrated effort by the State of Colorado to minimize leakage and seepage in all earthen lined canals and laterals supplies in Colorado could be firmed. Improvement to the delivery system in Colorado will help strengthen the Prior Appropriation Doctrine by putting more water in the rivers of the state. The Prior Appropriations Doctrine was written for times of shortage. The Doctrine has served Colorado well for the last 150 years. It is our belief that our future depends on it.

Respectfully,

David White, Chairman
Board of County Commissioners

Glen Davis, Vice-Chairman
Board of County Commissioners

Ronald Henderson, Commissioner
Board of County Commissioners

PUBLIC INPUT ITEM 32

September 14, 2014

Dear Mr. Eklund -

My name is Chelsea Congdon Brundige. I am writing this email to offer my few thoughts on the 2nd draft of the Colorado Water Plan. I am long-time supporter and friend of Governor Hickenlooper. I serve with pleasure on the Board of Western Resource Advocates. I am a water consultant with Public Counsel of the Rockies in the Roaring Fork Valley working on various projects involving stream gaging and improved water accountability. I have volunteered for many years on behalf of the Snowmass Capitol Creek Caucus on a collaboration with the Snowmass Water and Sanitation District to develop mutual protections to preserve the CWCB minimum instream flow in Snowmass Creek which serves as the water supply for 2 distinct watersheds. I am also a strategic advisor on the Crystal River Stream Management Plan which is being developed by Lotic Hydrological, under an effort led by the Roaring Fork Conservancy.

My comments on the Water Plan are based on my experience enumerated above, and on my many years of professional work on western water issues for Environmental Defense Fund and other groups.

First. I hope that the final draft of the plan maintains and strengthens the focus on conservation. The conservation goal of 400,000 ac/ft in municipal conservation statewide by 2050 (approx. 1 % a year) should be a *minimum*. To my knowledge, municipal water providers often have significant inefficiencies in their systems precisely so they have a low-cost conservation option when the time comes to "tighten the belt." So I think the 1% per year goal is low low hanging fruit and should be strengthened.

I have observed first hand the work and investment by Snowmass Water and Sanitation District to increase conservation and efficiency over the past decade. Through investments in leak detection (the technology now makes this very easy), new pipes, meters (commercial and residential) and improved rate structure, they have reduced treated water losses from 34% in 2001 to 4% today. This makes them a leader *nationwide* among municipal providers. The experience of Snowmass Water and Sanitation District is worth studying.

Second, I think it is imperative that we avoid any new trans-mountain diversions. This is "old school" water management - it is expensive, environmentally destructive, and unnecessary. It won't help keep healthy rivers flowing -- and healthy rivers are one of the biggest reasons people love their experience of the Western slope. Trans-mountain diversions stand to severely impact any communities in the "home" basin. And it is not at all clear -- in fact it is doubtful -- that we have any "extra" water to draw from the Colorado River Basin to the Front Range. Factoring in the existing water "gap" , future growth and climate change, we have likely used up the state's share of the Colorado. There are better ways to protect water supplies than new trans-mountain diversions. Taken seriously, the elements of the 2nd Draft Colorado Water Plan can lead to our meeting long-term water supply and management goals WITHOUT new trans-moutain projects.

Third, considering that agriculture accounts for 89% of the water used in the state, some of it on low value crops grown with inefficient irrigation practices at high altitude with high evaporation rates (!) , the contribution of 50,000 ac/ft towards closing the water "gap" seems very very modest. I have worked closely with agricultural water users most of my professional life (30 + years) and work today with irrigators in the Crystal River Basin. Agricultural water users can be very efficient with the right certainty, incentives and financial resources. I would hope that the

final Colorado Water Plan will *mandate* that CWCB study experiences in other states and develop pilot projects -- with funding incentives -- that will :

- clarify state law in support of preserving agricultural water rights relative to conservation -based efficiency and transfers, and remove the threat of abandonment of any part of HCU in connection with efficiency gains
- explore benefits of adjudicating water rights in over appropriated basins to create transparency that will in turn support accountability
- learn from and experiment with water markets in other states
- establish funds to cost-share efficiency improvements with irrigated agriculture
- support and help pass legislation to encourage ag efficiency transfers with appropriate and CLEAR protection of the irrigator's water right
- in Chapter 6, p 218, Item #10, commit CWCB to undertaking these steps rather than "consider" undertaking them

Fourth, the quantification and valuation of base flows or non-consumptive water needs is essential if we are to refine allocation systems to allow greater flexibility and incentives for meeting these needs . The Crystal River Stream Management Plan is an innovative, replicable approach for 1) developing a scientifically based assessment of ecological and non-consumptive needs under various hydraulic and hydrologic conditions, 2) identifying the costs and benefits of restoration options, and 3) prioritizing restoration actions through a supported stakeholder process. This project is a valuable template for other basins, and has already been widely shared with the Colorado River Roundtable, the CWCB and others.

Based on our experience to date, stream management planning will be a very important tool for the state going forward . I think the state should reserve at least $2 million /year for these kinds of projects instead of the $1 million identified in the plan.

With respect to the Crystal River, I would also suggest the plan (Chapter 6 page 251or thereabouts) include the Upper Crystal River in the list of proposed Wild and Scenic reaches in the State.

Fifth, and importantly, I find very little mention in the draft Plan of investing in increased and improved monitoring of stream flows across the state. The very basis of intelligent water management is good information. As others put it "an unmeasured system is a stupid system." Existing gages are owned and maintained by USGS/BOR or by DWR. They are used to administer water rights and various water agreements. This provides a spotty picture of flow conditions in a watershed over time, and a very poor baseline for understanding and evaluating the impacts of any water management decisions, especially increased diversions. As the State looks to a future of improved management and efficiency in water use, it seems essential to deploy technology (which is quite affordable) across the state to gather a baseline of information to support this agenda.

The measurements and range of data that can be collected by newer gages, linked by satellite telemetry to connect and integrate data across a watershed are FAR more advantageous than those provided by more traditional systems deployed by USGS and perhaps DWR. The costs of these newer systems are very competitive and they can be installed with minimal environmental impact. The Flathead Lake Biological Lab in Montana is just one entity that has a great deal of experience in this area.

The flow data collected from gages should be available on a publicly accessible website or platform. Transparency about how our rivers are flowing, where water goes, leads to greater accountability. When new projects are proposed, data so collected and managed will support inclusive decision making by all stakeholders with better outcomes. I have recently worked on a project on the Roaring Fork to provide a new gage to monitor flows on a distressed reach. This new gage will support efforts by Colorado Water Trust, CWCB , the River District and the City of Aspen to identify water rights that can be managed as needed to protect the CWCB minimum instream flow in that reach.

Thank you for the important work by the CWCB in spearheading the effort to complete Colorado's first Water Plan.

Please feel free to contact me with any questions about these comments. My information is below.

Sincerely ,

Chelsea Brundige

Chelsea Congdon Brundige
1755 Snowmass Creek Rd.
Snowmass, CO 81654
(970) 927-1667- h
(970) 319-6395-cell

PUBLIC INPUT ITEM 35

DON BATCHELDER
LYNN M. PADGETT
BEN TISDEL

BOARD OF COUNTY COMMISSIONERS

541 4th Street • P.O. Box C • Ouray, Colorado 81427 • 970-325-7320 • FAX: 970-325-0452

September 14, 2015

Colorado Water Conservation Board
Via Email: cowaterplan@state.co.state

Re: July, 2015 Draft – Colorado Water Plan

Dear Chairwoman Hoppe and Members of the Board:

Thank you for the opportunity to comment on the second draft of the Colorado Water Plan. This planning effort has been a worthwhile opportunity to review the existing water assets, available sources, and future water needs of the state as well as regional basins and local communities. Ouray County also supports the comments presented by the Northwest Colorado Council of Governments Water Quality/Water Quantity Committee and those of Pitkin County.

Ouray County appreciates the attention that the draft state water plan gives to the important dynamic between healthy forests and watershed health. The protection of our forests to ensure winter storage of snow and to prevent flash flooding with heavy sediment contributions to streams and reservoirs is particularly important to mountain areas such as those in Ouray County. We hope that the recognition of the importance of healthy forests to both water quantity and water quality, and the need to prevent wildfires from impacting our watersheds, will result in increased funding for, and attention to, wildfire mitigation and prevention among federal, state and local entities charged with timber and forest management.

Ouray County, along with its municipalities, farmers and ranchers, Tri-County Water Conservancy District, Colorado River Water Conservation District, recreational and commercial water users have partnered together to use the state water planning effort as a springboard for reviewing the current water uses and future water needs of Ouray County and the Upper Uncompahgre Basin. This partnership among water users within the Upper Uncompahgre is a groundbreaking effort at cooperation and coordination among water users on the West Slope. We believe that the resulting cooperative study and action plan anticipated to be developed over the next several months will benefit the residents and visitors of Ouray County for decades to come.

It is from the perspective of that cooperative water planning effort that these comments on the Colorado Water Plan are offered. The Board of County Commissioners understands the interests of its colleagues with similar obligations and roles on the Front Range, and is sympathetic to the challenges posed by an anticipated growth in population without sufficient water supplies to provide for all of the demands for water expected from an increased population. Nevertheless, we urge our Front Range colleagues and the CWCB to recognize that dismantling the agricultural industry on the West Slope, with all of the socio-economic and cultural ramifications that entails, in order to provide more municipal water on the Front Range, is not in the best interests of Colorado as a whole. Ouray County urges the CWCB to ensure that the Colorado Water Plan truly represents the state as a whole and not allow the final document to simply present a roadmap for future trans-mountain diversions from the West Slope to the Front Range.

In its Basin Implementation Plan, the Gunnison Roundtable adopted as its top priority the protection of existing water uses. The roundtable members discussed this priority at great length, understanding that many of the existing users are agricultural – ranching and farming. The importance of these uses considers not only the seniority of the water rights themselves, but the implications for changes or alterations on these water rights, and on the water users, of Compact calls or other triggers for ensuring practical minimum requirements for Lake Powell and Lake Mead. Under Colorado water law, existing uses should be protected from junior demands. Stating this priority affirms both Colorado law and the importance the Roundtable places on protection of existing uses from eminent domain or other non-voluntary alterations.

The importance of agriculture, both ranching and farming, is not limited to the produce and food generated from irrigation. The economic impacts of ranching and farming extend beyond the immediate crops

grown, whether grapes, peaches, corn, cattle, sheep or hay. Farming and ranching both play an important part in West Slope culture by providing scenic open spaces and preserving Western heritage. In addition, the economic benefits to the communities of the West Slope are direct and indirect with resulting jobs and cash that sustain living and working on the West Slope. Ensuring that agricultural water rights are protected from involuntary transfers to Front Range municipal uses or mandated curtailments protects the economy and the culture of the West Slope. The final state water plan should include an expanded discussion and consideration of the cultural benefits and the economic thread of agriculture throughout the West Slope communities and to the state as a whole.

The SWSI reports prepared by the CWCB staff, as well as hydrology analyses by the Colorado River District and the Bureau of Reclamation, confirm that there is a limited amount of unappropriated water left in the Colorado River, perhaps none available within Colorado's compact apportionment, except in high run-off years. Colorado water law permits anyone to divert and put to beneficial use the unappropriated waters of the state. The key is whether there is unappropriated water available for future trans-mountain diversions.

While the Front Range is said to be in agreement with the IBCC principle that an entity developing additional water will "assume the hydrologic risk" of water availability, such a statement is hollow and merely a confirmation of existing law without a further agreement that existing water rights from the West Slope (presumably agricultural water rights) will not be condemned or otherwise forced to curtail or limit diversions, or fallow ground, in order to provide water for a trans-mountain diversion in years when a junior right would not otherwise be able to divert. The so-called "points of consensus" developed by the IBCC do not include a reference to agreement that eminent domain shall not be used to curtail West Slope water rights in order to firm the yield of a trans-mountain diversion. This is an important piece of any future agreement as it also affects the "can and will" portion of proof in any water case involving a new trans-mountain diversion. The "can and will" requirement under Colorado law includes whether a project is "feasible" from an economic standpoint. Using other West Slope water rights to firm the yield of a new trans-mountain diversion could be a means of spreading the cost of a project over a greater amount of water, and a more regular yield of water, thus allowing a determination that the project is economically feasible.

Additionally, the IBCC has no legal authority to bind parties to an agreement, even in principle. While this seems to be generally understood, the final state water plan should not attempt to provide the "Seven Points" document with more legal status or implied consent than it actually has, nor should the state water plan imply that meeting the principles guarantees success for a new trans-mountain diversion project. While the discussion points are good for future direction of discussions, agreements need to be entered into in the context of specific proposals or projects – and among the actual interested parties – not done on a theoretical basis. Most of these points of discussion also require additional definition and elaboration to be elements of a future binding agreement.

As part of the state water plan process, basin roundtables have encouraged and led efforts to review the needs and water resources regionally within the basins. This process has also resulted in recognition that West Slope needs will increase for municipal purposes, recreational and other non-consumptive uses, and to ensure the protection and enhancement of agricultural uses. These additional draws on the Colorado River and its tributaries differs from prospective diversions by the Front Range in that the uses will not be totally consumptive and will return flows to the Colorado River Basin. In viewing this from a state perspective, encouraging more development and population migration from the Front Range to the West Slope may be one solution to ensuring a full supply of water to support an increased population without further depleting the Colorado River through new trans-mountain diversions.

The draft state water plan includes discussion about the use of fallowing, banking, and other irrigation efficiencies. The CWCB should exercise caution in promoting the use of fallowing or similar "banking" type programs as a "silver bullet". While fallowing, banking and similar concepts may be useful in selected sites, there is limited data at this time demonstrating the practical utility and efficient incorporation of these concepts in long-term water supply planning.

Conservation of water is an important aspect of ensuring sufficient water supplies for the future. However, there can be unintended consequences that will result from a "one-size-fits-all" approach. Agricultural conservation needs to be site-specific to ensure that other water users are not injured by a change in time and place of return flows, or lack thereof. Municipal and domestic conservation likewise needs to be tailored to meet the specific situation of each community. Lawn irrigation in the Front Range, as well as the West Slope, needs to be carefully planned to incorporate "gray" water and other water capture and reuse techniques where possible, and the choice of plants and grasses should reflect the arid conditions of Colorado. However, legislative mandates decreeing specific household water-use formulas or percentage limitations on lawn space

are not likely to be as well-received as community-specific means of conservation and should not be proposed as action items for legislation in the state water plan.

The state water plan should encourage solutions involving storage of water throughout Colorado. Probably every basin and sub-basin would benefit from being able to capture water during wet years for use in dry years. Solutions may include new techniques in aquifer storage to limit evaporative losses, increasing capacity of existing reservoirs, as well as construction of new off-channel reservoirs. Storage locations that have been considered in the past, but not constructed due to permitting challenges, should be reexamined. Particularly in the South Platte Basin, increasing storage capacity during times of high flows when native water otherwise leaves the state in excess of compact obligations to Nebraska, would eliminate the need for additional diversion of water from the Colorado Basin.

The SWSI 2010 information regarding Ouray County contained errors and outdated information. We appreciate the opportunity to provide more accurate information, which was included in formulation of the Gunnison BIP, and request that it be used to inform the final state water plan as well.

Ouray County does have concerns about the draft Chapter 10 – legislative and administrative proposals. It appears that there is considerable legislation contemplated to revise existing water law. These changes may not be beneficial to the state as a whole, and we request that the state water plan not include support for unspecific conceptual revisions that have not been presented in detail for comment or full consideration. Many of these revisions may also require voter approval, and as such, dependence on their implementation to meet future water needs should not be the conclusion of the state water plan.

Ouray County does support continued and increased financial support for projects included in the respective BIPs and other new projects that may be developed as solutions to water supply needs. The county has appreciated the ability to apply for Water Supply Reserve Account funds, and hopes this source of funding will remain available, and as priority for future funding increases, to allow development of water supplies for future water needs.

We appreciate the opportunity to provide these comments and hope that they will be of assistance in finalizing the state water plan.

Sincerely,

Don Batchelder, Chair

Lynn M. Padgett, Vice-Chair

Ben Tisdel, Member

RESOLUTION OF
THE BOARD OF COUNTY COMMISSIONERS OF
OURAY COUNTY, COLORADO
REGARDING THE COLORADO STATE WATER PLAN

WHEREAS, Governor Hickenlooper requested that the Colorado Water Conservation Board and its staff draft a water plan for the state of Colorado; and

WHEREAS, the state water plan has been presented for comments, and the Board of County Commissioners is providing comments to the second draft; and

WHEREAS, the Colorado Constitution, Article XVI, Sections 5 and 6 provide the basis for Colorado's water law, as expanded upon by statutes and case law, which law of prior appropriation has well served the state since prior to statehood, and

WHEREAS, in addition to state law, the use of Colorado River water is governed by the Colorado River Compact, treaties with Mexico, and the combination of these with case law, known as the "Law of the River" and Colorado's use of Colorado River water is subject to the limitations imposed by the Law of the River; and

WHEREAS, the state water plan is intended to assist with determining the water needs and resources of the state and its various basins within the parameters of the existing Colorado prior appropriation doctrine; and

WHEREAS, the Colorado River Basin, including its tributaries, provides water to both the West Slope of Colorado, six other states, and Mexico, as well as water diverted to the Front Range of Colorado; and

WHEREAS, Ouray County and the Uncompahgre River are within the Colorado River Basin and depend on its water for domestic, agricultural, recreational and industrial uses; and

WHEREAS, water availability analyses and studies performed by the Colorado Water Conservation Board staff, the Colorado River Water Conservation District, and the Bureau of Reclamation in cooperation with the seven states conclude that the available water supplies in the Colorado River are already surpassed by water needs within the Colorado River Basin; and

WHEREAS, the Gunnison Basin Roundtable in its Basin Implementation Plan, drafted as part of the state water plan has adopted as its first priority the protection of existing water rights, especially the agricultural water users that provide not only food for our tables, but the ranching and farming culture that is integral to the open spaces and culture of the West Slope; and

WHEREAS, other principles adopted by the Gunnison Basin Roundtable and the other West Slope roundtables, including the Colorado Basin Roundtable, urge that solutions for meeting water supply gaps as presented in the state water plan should not threaten the economic, environmental, and social well-being of the West Slope in order to provide additional trans-mountain diversions to the Front Range; and

WHEREAS, the Inter-basin Compact Commission (IBCC) has discussed principles, which will be included in the state water plan, that could direct future discussions between the West Slope and the Front Range regarding future trans-mountain diversion projects, which principles are not binding and have no legal status in either authorizing or confirming any future agreement;

NOW, THEREFORE, BE IT RESOLVED BY THE OURAY COUNTY BOARD OF COUNTY COMMISSIONERS AS FOLLOWS:

1. The Board supports the efforts of the Colorado Water Plan to provide opportunities for planning regional needs and resources for various beneficial uses, including domestic, agricultural, recreational, non-consumptive, and industrial needs.
2. The Board finds that experts believe little, if any, water is physically available, or legally available, for additional diversions to the Front Range, except in rare, high run-off years, and therefore, the Board has concerns about any discussions or agreements in principle regarding additional diversions to the Front Range.

3. Any conceptual agreements in principle adopted by the IBCC are the beginning, not the end, of discussions between the West Slope and the Front Range.
4. Land use authorities and decisions of local governments, including those contained in "HB 1041", should not be limited or curtailed as part of implementation of the state water plan.

APPROVED AND ADOPTED THIS 14 DAY OF SEPTEMBER, 2015.

Voting for: Commissioners Batchelder, Padgett, and Tisdel
Voting against: None

BOARD OF COUNTY COMMISSIONERS
OF OURAY COUNTY, COLORADO

Don Batchelder, Chair

Lynn M. Padgett, Vice Chair

Ben Tisdel, Commissioner

Attest:

Michelle Nauer, Clerk and Recorder
By: Hannah Hollenbeck, Deputy Clerk of the Board

PUBLIC INPUT ITEM 36

Colorado Foundation *for* Water Education

1750 Humboldt St, Ste 200
Denver, CO 80218

Ph 303-377-4433
Fax 303-377-4360

www.yourwatercolorado.org

September 14, 2015

Dear Director Eklund,

I am pleased to submit comments in support of Colorado's Water Plan draft Chapter 9.5 Outreach, Education, and Public Engagement on behalf of the Colorado Foundation for Water Education, its staff and Board of Trustees.

CFWE recognizes the extensive outreach that CWCB and the Roundtables have performed over the past two years, and would like to congratulate you and your staff for a job well done. We know how difficult it can be to engage large stakeholder groups in these kinds of processes, and we at CFWE were pleased to be a small part of these groundbreaking efforts.

As CWCB develops the final draft of Colorado's Water Plan, I would like to ensure that you know that you have CFWE's full support for the recommendations in Chapter 9.5. Through our work educating Coloradans about water, we too see a significant funding gap and a need to review and update the work of the 2008 Water Education Task Force.

All of the staff at the Colorado Foundation for Water Education are available to help you and your staff design and implement these recommendations as needed while drawing on the expertise of our members through the Water Educator Network. Please do not hesitate to call upon us. I value our partnership, and see opportunity for many more joint projects in the years to come.

Thank you for your leadership on this important issue,

Nicole Seltzer
Executive Director

PUBLIC INPUT ITEM 37

Pikes Peak Regional
Water Authority
PO Box 1834
Colorado Springs, CO 80911

Ms. Diane Hoppe, Chair
Mr. James Eklund, Executive Director
Colorado Water Conservation Board
1313 Sherman Street, Room 721
Denver, CO 80203

Dr. John Stulp, Director Compact Negotiations
Interbasin Compact Committee
1313 Sherman, Room 718
Denver, CO 80203

Senator Ellen Roberts, Chair
Representative Ed Vigil, Vice Chair
Water Resources Review Committee
State Capitol
Denver, CO 80203

September 14, 2015

RE: Comments Regarding Colorado Water Plan (Draft Two, July 2, 2015)

Dear Ladies and Gentlemen:

The Board of Directors of the Pikes Peak Regional Water Authority is pleased to provide a set of comments and recommendations concerning the second draft of the Colorado Water Plan for your consideration. Since this may be the only opportunity to submit comments before the CWP is finalized and submitted to the Governor, we have tried to be as comprehensive as possible while striving to be succinct. We have also tried to be selective with the subjects we have chosen to comment on. There are other issues raised in the CWP that interest us but we did not include them among these comments.

For the sake of simplicity we did not trace the path of these comments through the entire document. The CWP is a lengthy and highly inter-related report and a single change often necessitates multiple conforming changes in other parts of the document. For that reason, we did not specifically address Chapter 10 (Critical Action Plan) since each of those items tie to recommendations made with regard to

the other chapters. We trust that the professional staff will capture the continuity of revisions as they edit the document for final publication.

The Pikes Peak Regional Water Authority is an organization of public water suppliers that was formed by the members to share information and to work jointly to address common issues concerning water supply. The PPRWA is located in El Paso County with a geographic area that extends from Palmer Lake in the northwest portion of the county across the northern areas, down the eastern area and back to the west through the Fountain Valley. Generally, the region can be described as a horseshoe that surrounds the City of Colorado Springs. The members are the Town of Palmer Lake, Forest Lakes Metro District, Donala WSD, the City of Fountain, Security WSD, Cherokee Metro District, the Town of Monument, Woodmoor Water & Sanitation District, Triview Metro District and El Paso County. PPRWA has both statutory municipalities and a home rule city as members as well as Title 32 special districts. In addition, PPRWA has several associate members to include the Fountain Mutual Irrigation Company. The City of Colorado Springs, while not a member, attends our meetings and participates fully in discussions and the sharing of information.

In many ways, the PPRWA provides a good representation of the range of issues that are described in the Colorado Water Plan. The PPRWA is also a good example of how the unique circumstances that affect the water supply issues for each of the members demonstrate that policies that are adopted by the State of Colorado must be flexible enough to allow tailoring to meet those local conditions and circumstances. For example, several of the members' service areas are highly dependent upon non-renewable groundwater and those members have been developing options and plans to move from the non-renewable water supplies to renewable water supplies. Other members' service areas in the southern portion of the county have experienced substantial growth due in large part to the presence of Fort Carson and other essential Department of Defense facilities.

The realities of providing reliable water supplies to meet the needs of our members has led them to consider a wide range of methods to address the constraints that define their options. Water conservation is of course a fundamental strategy. Development of renewable water supplies to relieve reliance on non-renewable groundwater is another strategy. Creative ideas such as the use of lease-fallowing arrangements with agricultural water rights owners are being used. Other creative ideas such as the development of aquifer storage of water in anticipation of future droughts is another. The PPRWA is uniquely positioned to evaluate the impact of the state water plan and to suggest revisions.

The board members commend the members of the Interbasin Compact Committee, the members of all of the basin roundtables, and the hundreds of citizens who have participated in the preparation of the two draft plans that have been circulated over the past few months. In particular, we wish to commend the professionalism and diligence of the staff of the CWCB and IBCC who were tasked with organizing all of the data and information and producing such a far reaching and comprehensive water plan for the state.

Our comments and recommendations are to Draft 2 of the Plan. We are aware that the IBCC has continued to work on some of the sections to craft clarifying language for certain provisions. However, as positive as those efforts have been, proposed new language has not been released for review and

comment or incorporated in a revised Draft 2. Additionally with the deadline for filing comments quickly approaching, there is insufficient time to wait for any revisions to be released and reviewed. For those reasons we cannot assume that those changes have been or will be formally adopted and we can only offer comments based on the publicly released Draft 2.

The board notes that the true measure of the CWP will be whether it can feasibly be implemented. A plan is nothing more than a narrative unless its recommendations can be implemented. For the public water suppliers that are local governments there are three critical factors that will be essential to the successful implementation of the CWP. Two of these critical factors can only be addressed by the General Assembly or the voters.

The first is that the entire fiscal infrastructure of water supply must be addressed in order to provide the financial capacity for governments, agriculture and other key parties of the water system to achieve the goals of the CWP. We will have comments with regard to this issue when we address Chapter 9 of the CWP.

The other issue that can only be addressed by the General Assembly or the voters is a restructuring of local governments with respect to their jurisdictional authority, fiscal capabilities and governance. The plan cannot be implemented if it imposes mandates on local governments that exceed or are not within their legal authority to undertake. Colorado has historically been a local government state and that value system has been incorporated into the CWP. However, as the CWP notes, several of the water supply, land use, economic and demographic issues have now grown to affect regions that transcend many of the jurisdictional boundaries of local governments. In some cases the region may be as large as an entire river basin. In some cases the region may be confined to one or two counties but encompass several municipalities, special districts, and other governmental entities. To accomplish some of the goals set forth in the CWP, it will be necessary for the General Assembly to provide the local governments with the tools to form and operate regional entities.

The third issue falls to both the General Assembly and the regulatory agencies of the executive branch. The Colorado Water Plan has many, many conclusions and recommendations that are useful and positive. But the recommendations must be crafted in such a way as to allow the local water suppliers to tailor them to local circumstances, constraints and needs. Although it is a trite saying, “one size does not fit all.” The PPRWA urges policymakers to keep in mind that blind conformity can be as counterproductive as doing nothing.

If there is anything that the PPRWA, its members or any of our professional support staff can do to assist in the comprehensive review of Draft 2 of the Colorado Water Plan, please do not hesitate to contact us.

Jessie Shaffer
Chairman

Contents

Chapter 6: Water Supply Management

No one is more keenly aware of the economic value of water than a water manager who is responsible for the securing and delivering of reliable water supplies to the public. Public entities are designed and intended to exist in perpetuity in order to support their communities. It is the obligation of the water managers and the elected officials who provide governance for the local water provider to plan many years into the future. Planning for the future ultimately requires execution of the plan. Local governments must begin the installation of critical infrastructure years before those facilities may be needed. Rights of way must be acquired, engineering must be accomplished, water supplies must be acquired and the financing of the system must be put in place.

Plans are made and actions taken with the knowledge that the future is uncertain and cannot be predicted. Certain risks can be identified and analyzed, but the future cannot truly be known. Public entities must make decisions today to commit public resources for many years into the future. It is important to remember that local governments are accountable to the citizens that they serve and that the assets – including the water rights - of the local government are ultimately owned by those citizens.

The CWP recognizes the importance of local water providers both as the entities that are on point to manage local water supplies and as partners with the state to accomplish the goals and objectives set forth in the plan. However, there is a thread of inconsistency throughout the plan with respect to the roles of the local water providers and the state. In several sections the CWP mixes the roles in ways that are likely to lead to misunderstandings and tensions between the two levels of government. On one hand, the CWP frequently notes the need for local solutions to local problems and encourages the local providers to take recommended actions. On the other hand, and sometimes within the same section of the plan, the State is cast in a command and control role that preempts local actions. We recognize that there are situations and circumstances under which the State must play such a role, but we recommend that policymakers review those relationships so that the plan is seen as a consensus building plan rather than being a wedge between parties who should be partners.

> **Recommendation: The plan be revised to clarify the relationship between the State of Colorado and local public water supply entities and to deemphasize a philosophy of state level "command, compel and control."**

Section 6.3.1 – Municipal Water Conservation

Public water managers know the cost of bringing every drop of water into their systems and how critically important each drop of water is to the economic wellbeing, public health and safety and aesthetic needs of their communities. The members of the PPRWA have placed a high premium on water conservation for the past 20 years and strive on a daily basis to have their water supplies used in the most optimum way possible. For our members, water conservation is an ongoing commitment. Our members endeavor to take advantage of proven passive water efficiency technologies, to educate users (including residential, industrial and commercial) about wise use and efficient use of the water received and to continually upgrade capital infrastructure. Our members use both passive water conservation and also demand management techniques.

Conservation and efficiency are mutually supportive and strengthening concepts. Efficient use requires conservation and conservation requires efficient use.

Our water managers recognize that water conservation is both a strategy and a tool that is essential for supply management. However, it is not a magic wand that can solve all current and future water supply and management issues. Conservation is subject to diminishing returns. Each sequential action produces lesser results than its predecessor action. It is risky to rely too heavily or disproportionately upon water conservation to manage water supply. For example, modern prices set for residential consumption of water are designed in such a way as to increase the price as the volume of water consumed increases. A customer who uses a lot of water will pay more at the meter than a customer who uses significantly less water. The rate structure is intended to incentivize the customer into making knowledgeable choices with respect to the purposes for which he or she is using water.

Some advocates of water conservation seem to view higher prices as a mechanism to reduce individual and overall water use. It is more appropriate to view water pricing as a mechanism to align the value of water with the value of the use of that water and to recognize that water is a scarce resource. Achieving customer awareness of these two realities provides constant evaluation and judgment regarding how the water received is allocated among the varied uses that are important to the customer.

It is well established that the uses of residential water vary with respect to their importance to the customer. Outdoor water use for lawn irrigation tends to be less important than water used inside the home for cooking, bathing and so on. This reality means that it is relatively easier for a customer to reduce outdoor water use as prices increase but less easy to curtail indoor use. Customers are likely to demonstrate an initial significant reduction in water use in response to a price increase when outdoor water use is part of the mix of uses. However, a subsequent price increase is unlikely to result in a comparable reduction in use because the increment most easily given up has already been curtailed. Each subsequent reduction will be smaller than the previous reduction. This point will be revisited in our comments on Chapter 9 when we discuss the phenomenon of higher prices and decreasing total revenue.

Economic incentives embodied in customer rates are not the only forms of pricing that are used. Plant investment fees (frequently called tap fees) are being structured in ways to allow the applicant to structure an entire project around wise water use with the plant investment fee being customizable to provide an incentive for such decisions. One of our members, the City of Fountain, has pioneered the use of such fee structures and has had extraordinary success with it.

> **Recommendation: PPRWA recommends that the CWP include a discussion of the use of structured or tiered tap fees as a method of incentivizing applicants to incorporate wise water use and water conservation into their designs and plans with a particular focus on reducing the presence of irrigated lawn areas.**

There is no doubt that customers of water (whether residential, commercial or industrial) are price sensitive with respect to the water that they acquire. Price is not, however, a silver bullet that can transform consumption behaviors as a standalone strategy. Sometimes it is necessary for the water

supplier to impose behavioral controls on the customer as well as structuring the rates to incentivize wise use. An example would be schedules for outdoor watering that limit the unbridled application of water for lawn irrigation. Another example would be the use of incentives for the customer to install water saving fixtures or to convert the landscaping to favor plants that need less water to thrive. Our members have established these programs as well as having adjusted their price systems.

Many studies have shown that customers can be educated with respect to the wise use of the water that is delivered to them. For a municipal water system, however, water is very often a public good that must be made available on demand for the public health and safety of the community. Fire protection is an obvious example. Environmental concerns over air quality and the quality of street run-off require water to be used to mitigate dust and street dirt and debris. Parks and open space provide opportunities for public recreation, urban wildlife, the tempering of heat buildup during summer months and aesthetic enjoyment. Public goods by their very nature are not capable of being priced as is water provided as a commodity. Nor may public goods exclude any users – they must be universally available.

The discussion of water conservation included in the CWP is helpful but limited in its scope. Conservation is more than simply ratcheting down on consumption and use or redirecting the water from a current use to another use that is deemed to be of higher priority. Conservation is also managing the source of the water supply to shift reliance from limited or diminishing supplies (such as the Denver Basin aquifers) to the use of renewable water supplies. The CWP should recognize in its narrative that not every development of a water supply that is new to the provider is inherently suspect. Often such development is a sound and structured balancing of the water supply so that the public water supply is stable, sustainable and efficient.

> **Recommendation: The narrative in the CWP should recognize that conservation includes the decrease in use of nonrenewable supplies and a shift to renewable water supplies.**

An Unsound Reliance on Per Capita Use Statistics

The CWP in several places refers to per capita use of water within municipal water systems and makes note that reductions in per capita use have been positive. While that is undoubtedly true, we urge caution not to become overly enamored with or committed to a statistical measure of per capita use on the premise that it is the only relevant indicator of efficient or non-efficient water use in a municipal setting. Per capita calculations are a simple but potentially misleading statistic and should not be relied upon without an analysis of underlying factors and dynamics related to use.

Caution should be taken to avoid assuming that per capita use means exclusively metered water service. If the per capita number is arrived at by the simple arithmetic of dividing total water delivered to the community by its aggregate population, that number will be misleading because it includes among other things water made available as a public good. To be useful the calculation must be specific to the use of the water and not include irrelevant or unrelated uses. While the narrative of the CWP with respect to per capita use is valuable, we believe that the narrative should include a description of the limitations of the statistic as an indicator of performance.

In addition to the preceding cautions, it should be noted that exogenous factors should be identified and taken into consideration when calculating per capita use. Weather, for example, is a very powerful influence on residential water use. If the weather is hot and dry for extended periods, water use per capita will likely be higher than when the weather is cool and wet. As another example, consider the statistical effect if a water provider has had a manufacturing plant that commands the use of significant amounts of water in the production process locate within the service area. That new and sustained use can affect the calculation of per capita consumption if it is not accounted for in the analysis of actual use. The plant may be an employment and economic benefit to the community and its water consumption may also make it an important revenue source for the water provider. Per capita water use can be a useful statistic but we urge caution before relying on it too heavily to craft water supply policies.

As a final comment on the limitations of relying too extensively on the statistic of per capita use, making comparisons between time periods requires significant qualification to avoid reaching misleading conclusions. The further apart the two time periods are the more likely it is that they are not as comparable as might first appear. As an example comparing the gas mileage between an automobile manufactured in 2015 with an automobile manufactured in 1955 are not very useful because while the product (automobiles) is the same the technologies employed for each model are separated by generations of improvements. That point is relevant to the per capita use of water in 2015 as compared to the per capita use of water in 1965 or 1975 or 1985. Technologies related to the delivery of water have changed dramatically. Societal values related to the uses of water have also changed.

> **Recommendation: PPRWA urges policymakers to frame the narrative concerning the statistic of per capita water use in a proper context to avoid inappropriate conclusions and enactment of ill-designed policies.**

> **Recommendation: The CWP cites several examples of tools that a water supplier can mix and match to be the most successful fit for its system. However, not every tool must be used by every supplier in every set of circumstances. The PPRWA urges the policymakers who will finalize the CWP to avoid developing a "straightjacket" of required practices that must be employed by each and every supplier but rather to support each supplier to select those which will have the greatest benefit for its system. It is the result that is important rather than the method used.**

Table 6.3.1-1 – Item 2 "Establish a Statewide Conservation Goal with Intermittent Benchmarks"

PPRWA believes Item 2 in Table 6.3.1-1 (page 164) needs to be reviewed before it is included as a final element in the CWP.

As item 2 is currently structured, it presents a significant conflict between the role of the State as a facilitator to move conservation forward and an imposer of mandates upon the local providers.

Future action "2 b" is very problematic as it is written. The language clearly indicates that the State will develop and impose external conditions on the development of new water supplies regardless of source or proposed use and will prohibit any transfers that do not meet the criteria. Not only does this

statement embody a heavy-handed command, compel and control role for the State, it is a refutation of the expressed goals of working with suppliers – which are by and large other governments with locally elected officials – in developing local solutions to local problems.

Future action "2 b" is an example of the kind of statement and policy that can lead to unintended consequences. If, for example, the criteria are so tightly drawn and implemented that a water provider is foreclosed from being able to develop renewable water supplies to supplement or replace reliance on nonrenewable water supplies such as groundwater, the provider will be locked into use of the nonrenewable supply and the CWP will have failed. Efficiency improvements and conservation gains can be undermined if the State ties itself to a rigid interpretation and adherence of "one size fits all" regulations.

The board notes that the other future actions are positive statements that can be readily embraced and supported. Unfortunately, future action "2 b" is wholly incompatible with the other items and divides the list of future actions into two distinct sets which are mutually exclusive. In fact, future action "2 b" is an outlier item that is inconsistent with the other action items and diminishes their importance.

Recommendation: PPRWA encourages policymakers to reconsider this set of statements and to strike future action "2 b".

Table 6.3.1-1 – Item 5 "Develop New Incentives for Conservation"

We note that future action "5 c" is expressed as a command, compel and control regulatory imposition. A plain reading of the language leads to the direct interpretation that the State will summarily deny any financial assistance to an entity that does not meet an externally developed and imposed set of criteria. This approach is analogous to that used by the federal government to force states into adherence to its policies by using its financial power to compel compliance. This provision is puzzling because it leaves the impression that current procedures for reviewing requests for financial assistance are somehow deficient concerning conservation factors. That is simply not the case. Such elements are considered and reviewed and the CWCB has ample authority to modify its review criteria now.

Recommendation: PPRWA encourages policymakers to either revise action "5 c" to be less authoritarian and absolutist or to strike the item entirely.

The same philosophy is embedded in future action "5 d" as well. Both "5 c" and "5 d" are directly in conflict with and undermine the other more positive statements under Item 5. We have grave concerns about this action item being misused and impeding activities that have been carefully designed to integrate agricultural and urban water uses through lease-fallowing contracts, interruptible water supply agreements or other mechanisms designed to mitigate the anticipated M&I Gap. We are concerned that this open ended action item will be used by opponents to such agreements in reviews by the State Engineer or in water court.

Recommendation: PPRWA encourages policymakers to strike future action "5 d".

Stretch Conservation Goal

We were surprised that there was a completely new and previously undiscussed stretch conservation goal inserted into Chapter 6 of Draft 2. The new stretch conservation goal was not included in Draft 1.

The inclusion of the stretch conservation goal is not an insignificant technical revision. It is a major policy shift that colors many of the other sections and goals of the plan. Even if the stretch conservation goal is meritorious, it suffers from a deficiency in process simply as a result of how it was developed and inserted into the CWP.

Whereas the plan has otherwise been founded on a grassroots upward development of recommendations, the stretch conservation goal was not publicly discussed or presented in concept to the roundtables. It was developed by a small subcommittee of a committee of the IBCC. It appears only very limited input into its development and inclusion occurred. In fact, the opening sentences of the paragraph that introduces the stretch goal (page 164) refers specifically to the grassroots process. The following passage, while a bit lengthy, is very useful for understanding why the imposition of the arbitrary stretch conservation goal is problematic and inconsistent with the entire roundtable process:

> "The minimum amount of water saved through water providers' active conservation efforts is a goal that was identified through three stakeholder processes. The basin roundtables underwent a process to develop portfolios of water solutions to meet future water needs. The IBCC examined these as part of their no and low regrets action plan and determined that low to medium conservation levels defined in SWSI 2010 were needed; and the scenario planning process determined that all of low, or half of medium conservation SWSI active conservation levels, or nearly 170,000 acre feet will be needed. This is enough water to meet the needs of about 1.1 million people, or thirty percent of all the new people expected to move to Colorado between now and 2050. Recently, the IBCC Conservation Subcommittee developed a stretch conservation goal that goes beyond the no-and-low-regrets actions:" (CWP, page 164)

Clearly the stretch goal was developed and imposed subsequent to the completion of the entire stakeholder process and further on the narrative recognizes this fact. The new stretch conservation goal was developed and imposed upon the CWP which is very different than having been developed through the process. In an era of heightened public skepticism with governments and governmental processes the lack of transparency involved in the imposition of the stretch conservation goal undermines the stakeholder process that was used to develop the consensus goals that were accepted by the roundtables.

The stretch conservation goal establishes an additional municipal conservation target of 400,000 acre feet by 2050 in addition to the conservation goals established in the basin implementation plans. This new conservation target of 400,000 additional acre feet needs to be put into context. The CWP in Table 5-1 (page 78) displays the consumptive use of water on a statewide basis. The Table notes that of the 13,700,000 acre feet of water that is, on average, naturally occurring, 5,300,000 acre feet (39%) is consumptive use. Of that consumptive use, municipal consumptive use is estimated at 400,000 acre feet or 7.5% of total consumptive use.

The stretch conservation goal of an additional 400,000 acre feet is the exact equivalent of the total municipal consumptive use that is currently occurring. In other words, the stretch conservation goal is tantamount to eliminating all municipal consumptive use. Another way of viewing this stretch conservation goal is to note that it is the equivalent of the yield of the Denver water system that serves approximately one-third of the state's population.

The CWP provides no methodology nor offers any explanation for how this additional amount of conservation was derived. Nor does the CWP reveal the assumptions upon which is was calculated. There is no data, no research and no description of the model used. Therefore it must be concluded that the number is simply arbitrary which suggests that its validity is questionable.

It is known and has been commented on in CWCB information that municipal water use has declined significantly since the onset of the drought of 2002. What makes this observation important is the phenomenon of diminishing returns. It becomes increasingly more difficult to secure the same gains as were accomplished previously. Simply mandating an arbitrary standard does not change that reality. The adoption and insertion of the stretch conservation goal simply ignores that reality and imposes a target derived without benefit of analysis and which may not be even achievable. In fact, it may be counterproductive if one of the mechanisms to achieve the target is to limit or disallow any of the IPP's that are included in the basin implementation plans.

The stretch conservation goal was a last minute insertion into the CWP and arbitrarily trumps the combined work of all of the roundtables. The stretch conservation goal was not vetted beyond a very small group before it was inserted into the CWP. In addition to suffering from a lack of process and review by the roundtables, this stretch conservation goal has widespread and long term implications for other critical sectors of the state. For example, it will have profound implications for economic development and the ability of the state to attract the kinds of businesses and industries needed to produce the economic product of the state in future years.

The roundtables were designed by the General Assembly to be broadly representative of the water users and water interests in the basins. The roundtables are not only broadly inclusive, their meetings, activities and information have been available to the public and the media since their creation. Any interested party had the ability to monitor and participate in the deliberations of the roundtables. The effect of this stretch conservation goal reaches far beyond the water community and touches the broadest sectors of the state from business and industrial to recreation to environmental to agriculture. It should not be imposed upon them without having been made available to them for comment.

The lack of substantive public discussion of the stretch conservation goal argues very strongly for policymakers to review this provision of the plan carefully and in detail. Reducing municipal water use by such a large amount on top of the other conservation goals embodied in the basin plans is simply unrealistic. For illustration purposes, one only need to add the amount of conservation set forth in the basin implementation plans and the amount of the stretch conservation goal to see that the combined total far exceeds the total municipal consumptive use displayed in Table 5-1.

Any water conservation target that is of this magnitude, scale and aggressiveness exceeds the capabilities of the water supply community to achieve by itself. It must be accompanied by a paradigm shift that includes the participation of businesses, governments, cultural institutions and others as well as the technical expertise of the water providers. Rather than simply accepting and endorsing the subcommittee's stretch conservation goal, the CWP should endorse a process for a broader community dialogue to develop a consensus for an ambitious - but achievable - conservation target. The CWP is intended to be a "living document" which means that it will be continuously reviewed and modified in relation to new ideas, new technologies and new constraints and capabilities. The stretch conservation goal should not be made part of the CWP until the broader community of Colorado interests has had the opportunity to consider it.

In addition there will need to be a consensus about the means for each community's and each interest's contributions to achieve the target. The basin roundtables must be given the opportunity and time to evaluate their implementation plans to determine whether the stretch conservation goal nullifies their work. The conservation goals adopted as part of the implementation plans considered the contribution of passive and active conservation to reducing the basins' M&I Gap. Those goals can be considered to be achievable. There is no way to determine whether the stretch conservation goal is achievable. As important as the IPP's in each of the basin plans are, it must be noted that those IPP's do not represent or include 100% of the projects that will be undertaken in the basins. The entities that are implementing their own projects need to be afforded the opportunity to review the potential effects that the stretch conservation goal may have on those projects and plans.

No individual water supplier can plan for or commit resources to an undefined portion of a statewide target that is not grounded in public acceptance. Moreover, the consensus must be based on an equitable allocation of responsibility to realize the target. No local water provider should be given preference over any other provider. Nor should any local water provider be required to participate at a level in excess of an equitable allocation. It would be a perversion of the entire multi-year process if the CWP became responsible for levying a disproportionate share of the stretch conservation goal on smaller water providers that lack the financial and organizational resources of the larger providers.

Is the Stretch Conservation Goal Aspirational or a Mandate?

In our judgment, the essence of the issue is whether the stretch conservation goal is to be considered to be aspirational or whether it is a mandate that is in addition to all other conservation goals set forth in the CWP and the basin implementation plans. To see why this issue has become of concern, please review Chapter 10 on page 401 where it is included as an action item under "Critical Actions to Increase Conservation." That statement is consistent with the second bullet point in the narrative on page 164 that states that the stretch conservation goal would be achieved from a combination of elements including "new regulatory mandates." As written, the language concerning the stretch conservation goal leads inescapably to the conclusion that it is not an aspirational goal. Rather it is a mandate to be imposed upon the conservation goals developed and adopted by the roundtables as part of their respective basin implementation plans.

> **Recommendation: The PPRWA recommends that policymakers review the history of the development of the stretch conservation goal and whether it, as a matter of public policy, should be designated as aspirational or whether it is a mandate as an additional target above other conservation goals. This is a key policy decision for the policymakers to make as the final CWP is prepared.**

The importance of this policy decision cannot be overstated. The value of an aspirational goal is that it is a challenge to go further and do better even though it cannot be known at the outset if the goal is attainable. Attainability, while perhaps an indication of success, is less important than is the continual effort to achieve the goal. It is the effort that results in innovation and improvements in operations and behaviors.

If, however, the stretch conservation goal is cast as a targeted mandate then it is no longer aspirational whether or not it is attainable or achievable. Regulatory agencies are not invested with discretionary authorities. Regulatory agencies are subject to very distinct and bright lines related to whether an

activity under their jurisdiction did or did not occur. If the stretch conservation goal is cast as a targeted mandate, then there will be a high rate of failures simply because there is no way to know in advance whether the goal has any basis in the real world.

As structured and absent any clarification by policymakers, we believe that the stretch conservation goal is likely to become an *a priori* condition of permitting at both the state and federal level as well as a prequalification for any state or federal financial assistance for any water project. The net result of this dynamic will simply be to exacerbate an already problematic permitting process. Moreover we are concerned that this mandate will become a key element before the water court when the court is reviewing water rights issues and plans of augmentation. Without proper framing and guidance by the General Assembly, we believe that this mandate will become abused by opponents to water rights actions to include those that are designed as alternatives to agricultural dry ups.

The board strongly urges policymakers to make it crystal clear that the stretch conservation goal is an aspirational goal and it is not to be used as a criterion for the evaluation of local water conservation programs when reviews for regulatory, financial or legal purposes are made. The CWP as a consensus document should not advocate the use of the stretch conservation goal in any manner other than as an aspirational goal intended to encourage water providers to push the conservation envelope as far as practicable.

> **Recommendation: The PPRWA recommends that the General Assembly prohibit state agencies from using the stretch conservation goal as a factor in any review of a local water provider's proposed projects, application for permits, requests for state (or federal) financial assistance or in any proceeding before a water court.**

Integrated Water Resource Planning

Following the discussion of the stretch conservation goal in the CWP, the narrative introduces the concept of "integrated water resource planning" (page 165). Integrated water resource planning is directly tied to the stretch conservation goal and the two must be read and considered together. The narrative that discusses integrated water resource planning makes it crystal clear that those who incorporated the stretch conservation goal into the plan meant that it would be a direct mandate and not an aspirational goal. That motivation and intent is unmistakably clear as the following extract from the provision on implementation clearly sets forth:

> "**Accountability**: For the goal to be successful, water providers will be encouraged to do comprehensive integrated water resource planning geared toward implementing the best practices at the higher customer participation levels. This will be part of the necessary requirements to achieve state endorsement of projects and financial assistance."

There is no way to misinterpret that provision or to conclude that it is anything other than an imposition of command, compel and control mandates on local governments.

The CWP does not provide any discussion or information to determine exactly what is meant by "integrated water resource planning" or what would be required of local governments to develop it. Such an omission from the CWP creates a huge void in the CWP and how it should be used by local governments. While the CWP uses the word "planning" it seems that a proper reading of the narrative

shows that the word should be "management." In fact a simple Internet scan for the terms displays many entries that refer to management rather than planning.

Integrated water resource planning is best understood as a process that considers multiple viewpoints of how water resources should be utilized given various constraints such as environmental, legal and institutional. Options are identified and considered in order to optimize the use of scarce water resources. The scope can range from being very local to encompassing an entire river basin. In fact, the entire basin roundtable process was an exercise in integrated water resource planning.

The members of the PPRWA have been involved in multiple integrated water resource planning projects and efforts over the past several years. In some cases local financing and resource commitments were matched or augmented by state funds committed by the CWCB. Most recently a PPRWA regional infrastructure engineering study was completed and released. The study conducted by Forsgren Associates was released in April, 2015. The following excerpt from the study is provided to demonstrate that integrated water resource planning is being accomplished today:

> "Some of those members have now joined others in the PPRWA to support a more focused effort to quantify future participant demands and capacity needs for a larger regional system, develop specific facility needs to meet the demand, explore current or planned infrastructure that could support the overall project purpose, develop conceptual costs for these facilities, and point toward a governance structure and implementation plan to move forward."

This regional infrastructure study follows an earlier Water Infrastructure Planning Study (WIPS) that was conducted in 2008. The WIPS was commissioned to take a comprehensive review of alternatives that were potentials for using Denver Basin groundwater resources more efficiently and to develop new renewable water supplies to the northern portions of El Paso County. The just completed regional infrastructure study was the next phase of the work accomplished in WIPS.

With these two studies having been completed, the next phase will focus on the development of a phased approach to the completion of the regional infrastructure system, initiating the framework for the governance of the project and to identify and begin the process of securing funding for the project.

For the past decade and continuing on into the future, the PPRWA has been involved in conducting a comprehensive and professional integrated water resource planning process.

The imposition of the stretch conservation goal is a complete refutation of integrated water resource planning because it overrides the legitimate process and it works backward from an arbitrarily imposed end result that is designed to preclude the identification and evaluation of other options.

> **Recommendation: PPRWA recommends that in the absence of a definitive framework for integrated water supply planning that a local water supply provider that has undertaken a project or program that is consistent with its respective basin implementation plan be presumed to have met the requirement for integrated water supply planning set forth in the CWP.**

6.3.2 – Reuse

The board was pleased that the CWP recognizes reuse as an essential element to the water system supply management. However, Section 6.3.2 encourages direct potable reuse of municipal wastewater

but fundamentally misunderstands the issues and the law regarding direct potable reuse. As written, the plan suggests the only health and regulatory issue with direct potable reuse is brine disposal (page 174). For example, the draft plan states (on page 175), "---there are no regulations prohibiting or limiting a utility's pursuit of" direct potable reuse. That is not accurate – direct potable reuse is not permitted; it is, in fact, prohibited.

The Water Quality Control Commission's Regulation 84 prohibits direct potable reuse in Colorado. The plan suggests (page 174) the regulation only addresses non-potable uses. That assertion misses the main point of the regulation. That is that Regulation 84's silence does not mean direct potable reuse is unregulated. To reach that conclusion, a quantum leap in faulty logic must be accomplished. The Regulation is properly interpreted as holding that direct potable reuse is unauthorized. Only that direct reuse of wastewater expressly authorized by Regulation 84 is allowed. Any form of direct reuse not expressly authorized is prohibited. Section 84.6.c holds:

> "Treaters and users planning to use reclaimed water shall have or obtain a Notice of Authorization from the Division prior to any use of reclaimed water."

Additionally, Table 84-8 (approved uses for which the Division will issue a Notice of Authorization) does not include potable use. It is clear that potable reuse is currently illegal in Colorado.

Direct potable use will likely be authorized some day, and PPRWA encourages that result. As it stands, the draft plan espouses reliance on an illegal activity without acknowledging that it is illegal. The plan should recognize this fact and recommend funding, research and plans to develop standards and processes to allow direct potable reuse to be part of the state's water supply solution, recognizing the important role of the Water Quality Control Commission in maintaining public health and vetting proposals to authorize direct potable reuse. Subject to that threshold issue, the plan can encourage direct potable reuse where the Commission allows it.

Indirect reuse and nonpotable reuse are lawful alternatives available today and should not be discounted. The bulk of the conservation measures discussed in the plan address outdoor municipal uses. Nonpotable reuse is a viable means to satisfy most outdoor demands and is every bit as effective a demand management tool.

6.3.3 – Land Use

This section includes some very useful information. However, there are two issues which are not addressed in the narrative that we believe are important to note.

The first of these issues concerns the jurisdictional authority of local governments to make or influence land use decisions. This is less of an issue for home rule or statutory municipalities that have powers related to subdivisions, zoning, building codes and other land use matters than it is for Title 32 special districts. A Title 32 district does not generally have subdivision controls. Title 32 districts provide services to the unincorporated areas of a county and the county holds the regulatory control over subdivisions. As such, Title 32 districts are the recipients of the land use plans and decisions made by the county and must provide service to the areas and uses that are within their service areas.

Potentially this bright line of authority could become a problem as the concept of integrated water resource planning is implemented. A local government should not be penalized for not doing something that it has no legal authority to do.

The second of these land use matters involves densification. By densification we mean the integration of residential and commercial uses of land with higher numbers of people being located in closer proximity to each other than may have been the earlier custom. There are many economic advantages to densification and it is clear that the market is already adjusting to take advantage of the economies of scale and scope that result from densification.

For a local water provider densification brings some additional adjustments that should be recognized. The design of the water supply infrastructure will change to accommodate the new demands for water volume and water pressure needed to adequately serve the more densely populated neighborhoods. However the bigger issue is that of a changing mix of the uses of water. Through densification the size of lots generally decreases. That usually reduces the percentage of the lot that is committed to lawns which, in turn, relieves the residential customer from having to irrigate the lot.

As densification reduces the expanse of residential lawns, new designs will have to incorporate newer and larger green areas and opens spaces to accommodate the needs of the neighborhood. Children need play areas ranging from small pocket parks to soccer fields and other larger expanses of land and those areas must be in close proximity to where the children live. Adults also need the ability to walk, recreate, socialize and congregate in open areas that are well designed and maintained. These uses will place a greater responsibility on the local water provider because the water committed to the uses will be a public good rather than a retail commodity sold to individual customers.

> **Recommendation: PPRWA recommends that the CWP recognize these changing dynamics and to identify policies that insulate local water providers from being punished for not doing something they are legally not allowed to do. PPRWA further recommends that such policies be designed to hold the local water providers harmless from sanctions that would disqualify them from financial assistance.**

6.4 – Alternative Agriculture Transfers

We note that the discussion often portrays the dynamic between municipal uses and agricultural uses as being a zero-sum trade-off. We do not believe that is valid. We see many opportunities for municipalities and agricultural interests to be long term mutually supportive partners. One such opportunity might be joint efforts between municipalities and irrigators to establish and operate water storage that could be used by the parties in a balanced and economically productive manner.

The section provides a wealth of examples where interests other than municipal have successfully used ATM's to accomplish mutually beneficial goals. There is inherently no reason why only two partners can use an ATM. It may be more complicated but structuring a multi-party ATM might provide even greater benefits than a two-party agreement.

The PPRWA has been a strong supporter of ATM use for many years. We have participated in many working groups and committed organizational resources to the development of ATM concepts. In fact, two of our members, the City of Fountain and Security Water & Sanitation District, are current participants in an approved pilot project with the Lower Arkansas Valley Water Conservancy District and the Super Ditch that is delivering water for the first time this summer.

Since the drought of 2002 the General Assembly has enacted several pieces of legislation that were intended to further cooperative water sharing arrangements between agricultural and urban users.

Unfortunately those pieces of legislation have not resulted in much activity. Water banks, for example, have not been created. Interruptible water supply agreements largely remain unused. Rotational crop fallowing-municipal leases have only a single pilot project that just began delivering water this summer. Each holds promise yet each has proved to be unattractive to both the agricultural interests and also the municipal interests.

> **Recommendation: PPRWA recommends that policymakers undertake a review of the legislation that has been adopted in the years following the 2002 drought to determine what rigidities and barriers have been embedded in statute that have had a chilling effect on the use of the ATM options.**

6.5 – Municipal, Industrial & Agricultural Infrastructure

The PPRWA has been a longtime advocate of aquifer storage and this section of the chapter had many important observations and recommendations. We note that the CWP cites the Upper Black Squirrel Basin project for aquifer storage sponsored by Cherokee Metropolitan District which is one of the PPRWA members. Even though the narrative in the CWP is very well done, we note that it could be strengthened by an examination of the limitations on using the designated basins that is inherent in the governance structure of those basins.

The PPRWA has geographic proximity to several of the designated basins and some of our members have developed wells in selected areas of the basins. However the legal structure that establishes the governance of the basins is not conducive to using the basins for storage or for operating wells. The basins were never contemplated to serve such needs and are simply not designed to perform in ways that would enable aquifer storage.

> **Recommendation: PPRWA recommends that the General Assembly begin the process of reviewing the potential for use of the designated basins for storage as a drought response strategy.**

Chapter 9: Alignment of State Resources and Policies

This chapter is very well done and comprehensive and we commend those involved in its drafting. The chapter addresses several different issues, but we will limit our comments to Section 9.2 (Economics and Funding).

Section 9.2 – Economics and Funding

In many ways the CWP's preceding chapters all lead to this one section. It is not hyperbole to note that the success or failure of the CWP rests almost exclusively on the parties engaged in implementing the plan being able to meet their financial commitments to the plan and to each other. If the elements of the plan cannot be executed because there is insufficient fiscal and financial capacity throughout the state, then the plan will become little more than a notebook on the shelf.

Only the General Assembly and the voters can establish a financial and fiscal infrastructure that generates the monies needed to implement the plan. The provision of a sustainable and optimum allocation of water resources is a multi-generational commitment. The financial infrastructure must be multi-generational as well. We cannot finance and maintain the achievements envisioned in the plan if

we rely on year-to-year "pay-as-you-go" budgeting. We must look not only at multi-year financing of projects, we must recognize that many of them are multi-decadal as well.

The General Assembly and the voters must adopt financing streams that are exclusively dedicated to the achievement of the goals in the plan. Committed funding streams cannot be subjected to being cherry picked to divert resources to other purposes no matter how important or meritorious those purposes might be. Committed funding streams must be structured for the life of the project to be financed – they cannot be committed and administered on an ad hoc, episodic and minimalist manner. Committed funding streams cannot be made subject to budget competition - these funding streams should not be made vulnerable to the demands of K-12 education, Medicaid or highway needs. As a complementary policy, water funding needs should not be simply added to the list of programs and projects that are financed by longstanding budgetary practices. Too many straws in the soda rapidly depletes the soda and fails to satisfy any of the withdrawals.

We recognize that the State has many critically important program needs. Water has long been considered a secondary need with the hope that the water community could handle the demands and financing. To the extent that such a belief was ever valid, it is no longer. Water must become a very high priority and resources must be committed to it. As an unfortunate example of the way water has been viewed and prioritized in the past, we need only look at the history of distributions to water needs from the severance tax. Just as irrigation water should not be viewed as the default water supply for the future, revenues committed to water programs and projects should not be viewed as a default cash flow for other budgetary needs no matter how important those needs might be.

Even though we are an organization of local governments, our observations concerning the fiscal infrastructure of the state are not limited to local government finance or the state budget. Many parties will be participating in the commitment of resources to the plan and they must all have sound financial foundations in order to generate the monies that will be needed. Any kind of joint effort or multiple party participation is only as viable and strong as its weakest financial partner. We should endeavor to make sure that all parties have the financial capacity to be effective partners.

A significant issue in the plan is the improvement of agricultural efficiencies in water use. Yet we cannot expect the farmer to assume a financial responsibility that he or she cannot meet. Recreation is becoming an increasingly important economic sector and while many of the businesses that are engaged in providing recreational opportunities to customers demonstrate solid finances, not every such business is capable of pulling much of a financial load.

> **Recommendation: PPRWA recommends that the General Assembly start the process of analyzing the financial needs, the financial capacity in the system and how the plan can be financed.**

Section 9.2 includes a representative sample of potential financing strategies that might be employed to meet the needs of the plan. At this point in the development of the plan, it is premature to focus on one or a subset of the identified financial strategies. Each has merit but each does not have useful application to every type of financial need that is identified in the plan.

Recommendation: PPRWA recommends that the policymakers view this list as being representative rather than exhaustive and seek to develop additional potential revenue sources.

Recommendation: PPRWA also recommends that the policymakers have professional staff develop a set of criteria by which identified potential revenue sources can be evaluated to determine which would likely be the most productive for long term financing needs and to align each potential revenue source with component parts of the plan.

Although it probably does not need to be emphasized, it is important to note that many of the identified potential financing concepts would be subject to TABOR limitations. Again the severance tax provides a useful example. The severance tax generates revenues which go to the general fund for subsequent appropriation to various needs. The severance tax revenues are subject to TABOR. By way of contrast mineral lease payments are exempt from TABOR scrutiny because they are federal dollars that are transferred to the State of Colorado. The two are comparable in their application and purposes yet each is treated differently under TABOR.

The presence and application of TABOR effects local governments as well as the state government. Any financing structure that relies on local governments to be significant partners will need to be designed within the parameters established by TABOR.

As a closing note to these comments, it is important for policymakers to understand that local public water supplies are predominantly funded by fees rather than taxes. Fees are only generated when the supplier sells water to its various customers. For many, many years this was a very successful financing structure – the more water sold, the more income generated. Rate structures were designed with incentives for the customer to buy more water.

Contemporary times have altered that basic philosophy. Now more sales are not viewed as being as desirable as is efficient use and conservation. Rate structures have been revamped to incorporate disincentives for the customer to buy more water or to develop new uses for water. The result is that total revenue for the water supplier has often decreased because of rate increases. That has led to even more rate increases in order to recover the lost total revenue – which, in turn, had a dampening effect on customer sales.

Recommendation: PPRWA recommends that policymakers take a fresh look at the financing of local water suppliers in general and seek solutions to better align revenues with the operational requirements, capital requirements and the state plan requirements for the commitment of monies.

Permitting Efficiencies

The Governor's executive order strongly emphasized streamlining the permitting process for water projects. The CWP echoes that emphasis throughout its narrative and recommendations. PPRWA suggested specific actions in comments made to the first draft of the plan.

There seems to be a perspective that has been incorporated in Draft 2 that it may be beyond the scope of the plan to endorse specific concrete streamlining steps. We believe that including action items related to developing specific and concrete further actions to eliminate duplication of regulation by

state agencies of areas where another state agency has primary authority, redundant requirements for study and analysis of issues, and other specific steps. The plan's call for early state involvement in federal permitting will allow the State to help define the scope of studies and analyses prepared for federal permitting, which then can (and should) be used by state agencies without requiring separate analyses.

There should also be further clarification about what benefits will follow from state endorsement of a project.

> **Recommendation: The PPRWA recommends that the sections of the CWP that address permitting procedures be revisited and revised to reflect the Governor's call for streamlining.**

Conceptual Framework

In general, we do not have any specific comments regarding the conceptual framework as it would be applied to future transmountain diversions. We recognize that the conceptual framework is the product of an extraordinary process of collaboration and negotiation among the parties most directly at interest with respect to any future transmountain diversions.

We note that this process has largely been conducted among those stakeholders with a very specific goal in mind. This process was highlighted extensively during the Roundtable Summit last spring. The closing presentations were almost exclusively dedicated to the conceptual framework and its essential principles. It was praised as being a complete paradigm shift for interests on both sides of the Continental Divide to move forward for evaluation of any proposed future transmountain diversions.

Recently, there have been conversations that the points of agreement might be extended and imposed upon municipal water projects that have no relationship to the transmountain diversion of water. This is a very ill-conceived notion and we urge policymakers to totally reject such an application. As with the stretch conservation goal, this is a new and significant shift in policy recommendations. This is an issue that was not discussed at the statewide summit. No foundation or rationale has been put forward that would justify such a change.

The conceptual framework simply will not work for routine municipal water projects. Such an application of the framework would almost certainly have a chilling effect on projects designed to improve water supply sustainability and to better manage water supplies. As an example, if these conditions were imposed upon a proposal to establish a rotational crop fallowing to municipal lease with the goal of stabilizing the water supply for the municipality in times of need, the overburden of mandates might make the project infeasible. The undesirable consequence might be to forgo the fallow-leasing project and to take us back to the least desirable option – to permanently dry up the land.

> **Recommendation: PPRWA strongly urges policymakers to make it clear that the conceptual framework is expressly limited and to be applied to future transmountain diversions.**

PUBLIC INPUT ITEM 38

THE SOUTHWESTERN WATER CONSERVATION DISTRICT
Developing and Conserving the Waters of the
SAN JUAN AND DOLORES RIVERS AND THEIR TRIBUTARIES
IN SOUTHWESTERN COLORADO
West Building – 841 East Second Avenue
DURANGO, COLORADO 81301
(970) 247-1302

September 11, 2015

James Eklund, Executive Director
Colorado Water Conservation Board
1313 Sherman Street
Denver, Colorado 80203

Re: Comments on the Second Draft of the Colorado Water Plan

Dear Mr. Eklund:

The Southwestern Water Conservation District (SWCD) has been pleased to follow the development of the Colorado Water Plan (CWP) from its initiation in 2013 through the first draft in December 2014 to the second draft released this July. The CWP has been a major undertaking for the CWCB, the Roundtables, the IBCC, and state agencies. Many of the SWCD Board members are also on the Southwest Roundtable and have contributed to the development of the Southwest Basin Implementation Plan (BIP). SWCD applauds the effort and the resulting CWP, including the BIPs for each Roundtable. SWCD has supported the concept of a grassroots effort to address the State's water issues which both the CWP and BIPs promote.

SWCD has the following comments to suggest regarding the Colorado Water Plan:

Roundtable Comments
The contractors that prepared the Southwest BIP conducted a special roundtable meeting on September 1 to discuss and assemble their comments. SWCD supports those comments, some of which are reiterated herein, and requests that those comments be incorporated in the CWP.

Comments on First CWP Draft
Steve Harris, on behalf of SWCD, submitted comments on the first draft to the website on or about March 13. However, it does not appear those comments were received by CWCB and addressed in the second draft because there is no record of the comments and CWCB response in the tables documenting comments. Most of those comments are still applicable to the second draft and are integrated in the comments below.

Comments on Second CWP Draft
Chapter 7 – Watershed Partnerships – This section primarily suggests the formation of new and separate watershed partnerships. There are already a number of water-related organizations that

are confusing with overlapping and sometimes conflicting purposes. Rather than emphasis on new entities to address watershed issues, the use of existing water entities to address watershed issues should be equally suggested in the CWP. Existing entities might include water conservation districts, water conservancy districts, and conservation (previously "soil" conservation districts) districts. For instance, the Southwest Roundtable has eight sub-basins, many of which already have watershed groups.

Chapter 7 - page 306, action #7 – The statement that aquifer storage would have minimal water quality issues may not be true because water picks up constituents (e.g. TDS, salt, selenium) in the geologic strata in which the water is stored. This statement should be modified.

Chapter 7 - page 307 – The sentence immediately under section title "B. Policy Considerations" incorrectly references Chapter 10, which does not include legislative recommendations in this draft.

Chapter 8 – page 327, Table 8-1 – The Southwest Basin Roundtable developed a position on investigation of alternative water sources to a transmountain diversion (TMD). This position should be stated in the Southwest section of Table 8-1.

Chapter 9 - page 332 & 334, Section C.1. – This subsection addresses the balance of federal and state roles. The Section ends with "Colorado is committed to ensuring that the federal and states roles in water management remain appropriately balanced". This is an appropriate position for the State, and SWCD fully supports the State in this position; however, the State has not been effective in maintaining a balance. An action item should be how the State can reestablish the balance that has been lost.

Chapter 9 - page 338 – The difference in cost of tap water and bottled water should also be compared based on cost per AF and cost per gallon. For instance, bottled water is $10 per gallon; tap water is $0.003 per gallon. Bottled water is $3,258,510 per AF; tap water is $980 per AF.

Chapter 9 - page 347 – Funding and financing actions begin on this page and continue for several pages. Funding for agriculture, especially grants, is barely mentioned while recreation and environmental funding is emphasized. The cost to upgrade conveyance systems and reservoir repairs are beyond most irrigators and should have equal weight with recreation and environmental funding needs.

Chapter 9 – page 347, continue comments on funding and financing - Even though titled as funding and financing actions, this list is more of an inventory of options rather than actions. There are too many options, most of which cannot be accomplished. Also, the list promotes certain options such as container fee and green bonds over other funding sources. The inventory should be renamed as funding and financing options, and action item(s) should be developed for selecting the most appropriate funding sources to pursue. Since funding is a major issue, in order to implement many of the action items in the CWP, it probably should be discussed with the Roundtables in a manner similar to the Conceptual Framework. In addition to the inventory, the

IBCC should develop an outline of the types of projects that would be funded and a general estimate of the amount and timing of funding for consideration by the Roundtables. The legislators would be involved in the process as appropriate.

Chapter 9 - page 372, State Endorsement – The concept of State endorsement speeding up permitting a project appears helpful but could backfire. The federal permitting agency(s) could begin to require State endorsement as necessary to obtain a federal permit. The State is highly political, and may not support a project for political reasons not associated with the merits of the project. Therefore, care needs to be taken on the wording for supporting a project, but more importantly if not supporting a project. There needs to be a State position that is neutral, doesn't have a position, so the feds cannot use the State as a reason to reject a project. For instance, State support for a project could be predicated on whether it is consistent with the CWP and BIP.

Chapter 10 – In the first CWP draft, it was clear that the action items are the heart of the CWP, and which action items are eventually pursued will greatly affect the future of water in the State. Chapter 10 attempts to summarize the action items by category; however, the summary list has approximately 80 action items and is unwieldy and probably unattainable. Also, there are items on the list that don't seem to be action items but inventories or have not been vetted with constituents (e.g. most of items in Critical Actions to Align Funding and Explore New Funding). Further, the action items do not always match the action items in each chapter. This chapter is important but needs significantly more work to achieve its purpose of directing future actions of the CWCB, Roundtables, and IBCC.

General comment – SWCD supports the Southwest Basin Roundtable position regarding the need for evaluation of alternative water sources to a TMD. Currently, a TMD is the only option to ag dry up that is currently being considered in the CWP. Conservation will help but will not be adequate to meet the 2050 demand. Given the drought of the last 15 years and item #1 in the Conceptual Framework, it is very possible that the supply of water from a TMD is not reliable and if alternatives are not investigated, ag dry up becomes the only option. SWCD recommends that the CWP include evaluation of alternative water sources to a TMD, particularly alternatives to better utilize water sources within each basin, in the action items in Chapter 10 and elsewhere in the CWP as appropriate.

General comment – SWCD supports the Southwest Basin Roundtable position regarding municipal water conservation through reduction in the amount of lawn water consumption. Primarily, the reduction is aimed at new residential units not having the same amount of lawn as existing units so that unused lawn (e.g. decorative) is not installed. It does not make sense to dry up an acre of farmland in order to have a green lawn in the city for only aesthetic purposes. Trees and shrubs are not included in this category, only unused lawn. Increased efficiency of application somewhat addresses the problem by theoretically applying lawn irrigation more efficiently, but may in fact increase water use because the lawn is watered everyday whether it needs it or not. The only way to reduce lawn water consumption is to have less lawn or use grass that needs less water than bluegrass lawns. This Roundtable position is not addressed in the CWP and should be if the State is going to be serious about conservation.

General comment – SWCD recommends that the CWP address the compact issues associated with large CWCB instream flow appropriations on rivers near the state line by evaluating the potential future demands and initiating an appropriation and filing for a reasonable Future Use Allocation senior to the instream flow in order to safeguard consumable water supplies to serve future needs.

Conceptual Framework – SWCD supports the Conceptual Framework as developed by the IBCC.

Continuation of IBCC – SWCD supports the continuation of the IBCC because it has provided an effective method to communicate and discuss grassroots positions developed by each Roundtable to representatives of other Roundtables and State water officials.

Thanks for this opportunity to comment on this important document. Please contact myself, Bruce Whitehead, or Steve Harris if you have any questions.

Sincerely,

John Porter

John Porter, President
Board of Directors
Southwestern Water Conservation District

PUBLIC INPUT ITEM 41

To: The Colorado Water Conservation Board of Directors

From: Ken Ransford, 970-927-1200, kenransford@comcast.net

Date: September 15, 2015

Re: Ken Ransford's comments on Colorado's Water Plan

The Colorado River Basin Roundtable identified the six themes below in its basin implementation plan, and these are reproduced on page 51 of Colorado's Water Plan.

I. Protect and restore healthy streams, rivers, lakes and riparian areas
II. Sustain agriculture
III. Secure safe drinking water
IV. Develop local water conscious land use strategies
V. Assure dependable basin administration
VI. Encourage a high level of basin wide conservation

My personal comments below are organized according to these 6 themes. I have been the recorder at Colorado Basin roundtable meetings since 2005, and the voting recreation representative since 2010. I conclude with a list of six issues that Colorado's Water Plan has failed to address.

I. Protect and restore healthy streams, rivers, lakes and riparian areas

1. **How will climate change affect Colorado**? Your table summarizing the effect that climate change will have on Colorado is excellent; Table 4-1 on page 66. Please follow up with a table that indicates how much that Colorado's irrigated acreage will decline if temperatures increase 2.5^{o} or 5^{o} F and crop consumption needs increase 10% to 25%. Similarly, how much additional water will be required to keep bluegrass and other exotic shrubs adequately watered with hotter temperatures.
2. "**Keeping a stream flowing can be beneficial for aquatic life**." This statement on page 89 comes across as trite. At a minimum, this should be changed to read, "keeping a stream flowing is *essential* for aquatic life." On page 88, the plan states that 13,500 stream miles are "focus areas" for non-consumptive needs, only 15% of Colorado's estimated 90,000 miles of streams. All rivers are important. The plan repeatedly refers to preserving endangered or imperiled fish species (see page 108), but there is so much more to a healthy river than the triage needed to keep endangered or threatened species on life support.
3. **If we could leave as much water as possible in the stream, how would we do it?** Colorado's Water Plan does not ask this question, but I believe the public is interested in this question. When SGM Engineering, the author of the Colorado Basin Implementation Plan, asked the open-

ended question "What approaches do you favor to meeting future water needs," environmental conservation was the most common response offered by the public.[1]

4. **The Colorado Basin says "All basins should make protecting streams a priority"** (Section 6.2, page 143). On page 140, the Arkansas Basin fails to mention improving stream flows in its nine environmental and recreation goals; in fact, improving stream flows is rarely mentioned in Colorado's Water Plan. When it is, it is typically in the context of instream flows that have an established priority right. A stream in Colorado has no right to a healthy flow.

   Colorado's Water Plan says that Colorado will use its litigation fund to oppose any efforts by federal agencies to require bypass flows in order to maintain stream health unless it is for an instream flow with a correspondingly junior priority date (section 9.1, page 325). I believe this is a bad state policy.

5. **Why are Arkansas rafting flows are at risk?** Please explain the Arkansas Basin's concern that recreation rafting flows on the Arkansas River may be at risk in Section 3 on page 38, and what could be done to protect these rafting flows.

6. **Provide more analysis of instream flows.** Colorado's Water Plan describes how many instream flows there are (1,595 decreed instream flow rights on 9,180 river miles, Section 9.3, page344) but it does not describe how effective they are when river flows are low. I added up the total acre feet of all instream flows that have a priority date before 1900, and they total to about 0.3% of the water diverted for agriculture in a typical year. Instream flows are not very meaningful since most valuable agricultural diversion rights have priority dates before 1900. As written, the plan can mislead readers that the instream flow program is more effective than it actually is in maintaining healthy stream flows.

   At a minimum, the plan should be clear that instream flow rights are so junior they do not prevent rivers from being dewatered. This also raises a fundamental weakness in "Colorado's Water Plan." It has been written by the agency charged with managing many aspects of state water policy. As such, it tends to gloss over any flaws or weaknesses the agency has as opposed to being candid about them.

7. **Explain new dams in Colorado's water future.** Colorado's Water Plan never directly states whether any new dams should be built or enlarged, but it refers to them throughout the plan. Table 4.4 on page 74 suggests that there is space for 1.7 to 4.2 million additional acre feet in existing dams that store 500 acre feet or more. Does this suggest we do not need any new dams? Table 6.2-3 on page 128 suggests there's 780,000 acre feet potential additional storage. Does this suggest we need new dams? If so, where? The IBCC has identified 9 potential new storage sites (Section 6.5 on page 231), but where are they?

   The CWCB sets water policy and planning in the state (Section 2.4, pages 25, 27), and the plan should include a list of all dams in the state that have been identified for construction, expansion, or rehabilitation in the BIPs. That is the true essence of the statewide water plan. The

[1] Colorado Basin Implementation Plan, SGM, July 1, 2014 draft, page 18; April 17, 2015 draft pages 38-39.

state has also estimated it will cost $20 billion to bring the state's water infrastructure, including dams, to a satisfactory level; Section 9.2, page 332. There should be a list of projects that add up to $20 billion.

II. Sustain agriculture

1. **Agricultural consumption should be referenced, not diversions**. Colorado's Water Plan states that agriculture *diverts* 34% of water in Colorado; Section 5, page 87. This reference should instead be to how much water is *consumed* in Colorado by agriculture. The plan should also address that the water right we measure is the diversion right, but the water right we own is the consumption right. There is a lot of confusion about this. Irrigators regularly divert far more than their consumption right, in part because water court focuses on historic diversion records in water change cases.

2. **Irrigated acreage is overstated**. Colorado's Water Plan states that 3,466,000 acres are irrigated in Colorado, and that agriculture consumes 4.7 million acre feet.[2] The CDSS website and the USDA 2012 Ag Census both indicate we irrigate about 2.5 million acres in Colorado.[3] The higher figure of 3,466,000 overstates the amount of agriculture available to sustain Colorado's population and understates the percentage of agriculture we could lose with ag-dryup.

   The Colorado Basin White Paper states that Colorado should adopt a policy of food security. The biologist Edward O. Wilson says an acre can grow enough food to sustain 3 people living a primarily vegetarian diet.[4] At that rate, 3,466,000 acres sustains a population of 10.5 million. This may be three times higher than the population that can be sustained by Colorado agriculture as indicated in the table below.[5][6]

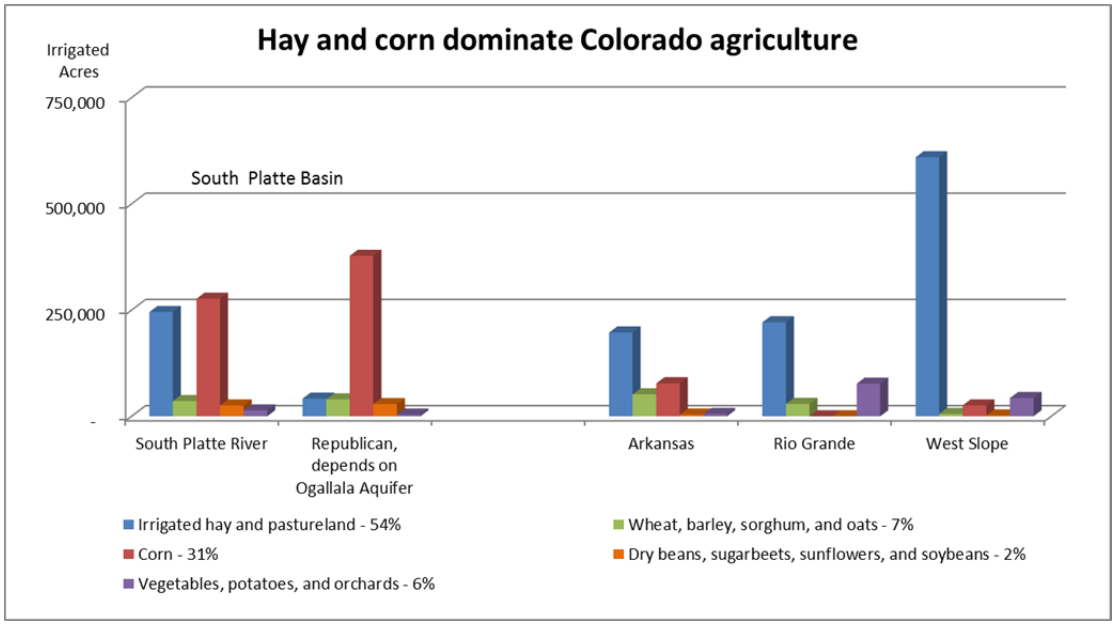
[2] Irrigated acreage is reported at Table 6.2-3, page 128, and crop consumption is in Section 5 on page 78.
[3] The CDSS website reports Colorado's 7 water divisions have 2,501,670 total irrigated acres, derived from GIS data; see http://cdss.state.co.us/basins/Pages/SouthPlatte.aspx. The USDA 2012 agricultural census reports that Colorado had 2,867,957 irrigated acres in 2007, and 2,516,785 irrigated acres in 2012. See, Irrigated farmland by county from the USDA Census of Agriculture, Table 10, Irrigation: 2012 and 2007, http://www.agcensus.usda.gov/Publications/2012/Full_Report/Volume_1,_Chapter_2_County_Level/Colorado/st08_2_010_010.pdf.
[4] The Future of Life, E. O. Wilson, (Knopf, 2002). See, How Many People Can Earth Support?, by Natalie Wolchover, Oct. 11, 2011, http://www.livescience.com/16493-people-planet-earth-support.html.
[5] Total acreage lost by 2050 in this table from unsustainable groundwater, IPPs, and urban sprawl is 635,000 acres. By comparison, SWSI 2010 estimates that 490,300 to 717,800 acres will be lost by 2050 depending on how large the gap is and how successful IPP implementation is. In the Republican Basin 35,000 acres have already been retired, leaving of 74000 acres to be withdrawn from production. This is rounded to) SWSI 2010, Table 4-11, Future Irrigated Acres by River Basin, page 4-27, http://cwcb.state.co.us/water-management/water-supply-planning/Documents/SWSI2010/SWSI2010.pdf.
[6] Colorado Basin White Paper, page 7, 2013.

	Acres	Population sustained
Current irrigated acres according to CDSS & USDA 2012 Ag Census	2,500,000	7,500,000
Less: Dryup in Rio Grande (80,000 acres) and Republican Basin (75,000) from unsustainable groundwater	-155,000	
Less: Acres lost to ag dryup from 455,000 af of IPPs (assume 1.4 af yield per acre)	-325,000	
Less: Acres lost from urban sprawl onto agricultural land	-155,000	
Equals: remaining agricultural land	1,865,000	5,595,000
Less: 20% increased crop water requirements from hotter climate	-365,000	
Equals: remaining agricultural land by 2050	1,500,000	4,500,000
Lost acreage in Republican Basin due to Ogallala dry up	-375,000	
Equals: remaining agricultural land by 2080	1,125,000	3,375,000

3. **Describe Colorado agriculture**. We predominately grow hay and corn, and 69% of 2012 agriculture revenue came from livestock sales, predominately cattle, but Colorado's Water Plan does not describe agriculture this way.[7] Colorado's Water Plan also does not describe the wide range of crop water requirements between municipal bluegrass (30"), alfalfa (20-25"), pasture hay (17-20"), corn (12-15") and small vegetables (9-10").[8] The plan states there are barriers to entry to young farmers, but does not explain what these barriers are; section 6.5, page 237. Young farmers are likely interested in growing crops for human consumption like vegetables, potatoes, and orchards, and these crops are grown on only 6% of all irrigated acreage. One major impediment to Colorado agriculture is the high cost of water court, which inhibits transferring irrigation water from one farm to another. The plan could address this issue by discussing the failed Flex Plan legislation the past several sessions.

[7] This table is created by categorizing irrigated acreage by crop type by county. This graph is created from the USDA 2012 Agriculture Census. Pasture land is from Table 12, potatoes are from Table 1, and all remaining acreage is from Table 10, http://www.agcensus.usda.gov/Publications/2012/Full_Report/Volume_1,_Chapter_2_County_Level/Colorado.

[8] J. Schneekloth J, Andales, A., "Seasonal Water Needs and Opportunities for Limited Irrigation for Colorado Crops," CSU Extension, Sep 2009, http://www.ext.colostate.edu/pubs/crops/04718.pdf.

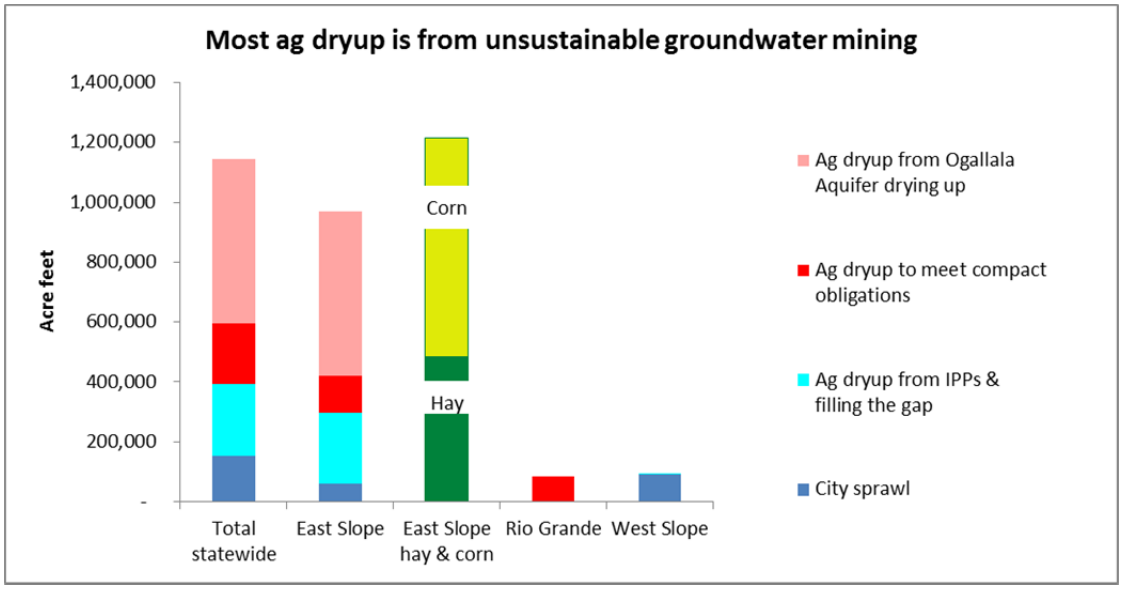


4. **Compare outdoor municipal landscape consumption with agriculture consumption.** Colorado's Water Plan does not emphasize enough that indoor water use is largely available for reuse, but outdoor landscaping consumes water that is lost to the system. Each acre of blue grass dries up almost 2 acres of corn, since corn consumes 16" of water and bluegrass consumes about 30."

5. **Additional agricultural water needs will mislead readers**. Table 6.2-3 on page 128 suggests that there is an agricultural water gap of nearly 1.5 million acre feet, and that the basin implementation plans have identified 780,000 acre feet of additional storage opportunities. Where are these dam locations? Lake Mead and Powell combined storage in April 2015 was only 40% of capacity, the lowest since Lake Powell began filling in 1963, and the inescapable conclusion is that holding back more water in Colorado for agriculture is unrealistic. Table 6.2-3 on page 128 implies that we just have to build or enlarge more dams to solve this problem, but can we get 1.5 maf more water when we already over-use our allotment by 1 maf of unsustainable groundwater mining?

6. **South Platte and Arkansas irrigation water needs cannot be satisfied by the West slope.** Ogallala aquifer groundwater pumping irrigates about 500,000 acres in the Republican Basin and 200,000 acres in the Arkansas Basin, and that is not sustainable. The plan does not mention this fact. Another 300,000 acres will be lost from Identified Projects and Processes that take water from agriculture or city sprawl on the East slope if the South Platte and Arkansas basins only strive for low conservation. This means the Front Range will likely lose about a million acres of hay and corn. According to the 2012 USDA Ag Census, there are 1,215,286 irrigated acres growing hay (483,816 acres) and corn (731,470 acres) in the South Platte and Arkansas basins. The good news is that corn and hay can be imported from adjacent states that receive more rainfall so that the Front Range's livestock and dairy industries, which account for 72% of

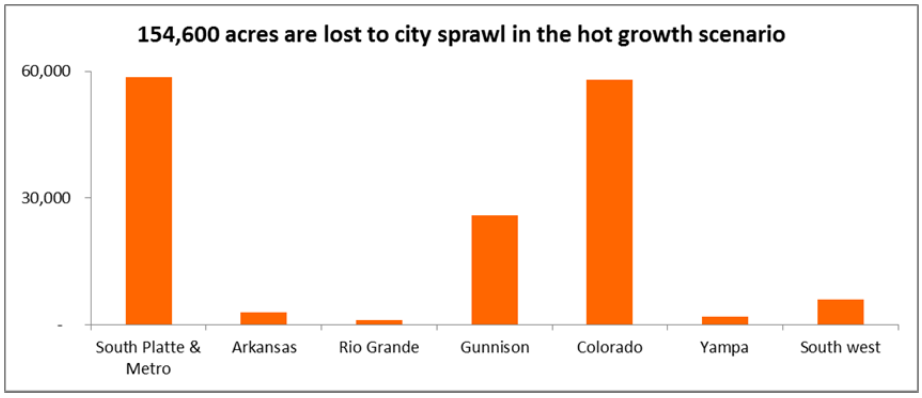
agricultural revenue earned on the Front Range, can continue to thrive. The West slope cannot solve this problem. The water plan needs a graph similar to the following to explain this relationship to Colorado citizens.



7. **Agriculture and recreation are ideal for multipurpose projects**. Recreation and agriculture can both benefit from irrigation efficiency improvements that divert less water from streams but apply it to fields more efficiently, and this could be emphasized more. Water consumption goes up when fields are sprinklered because water is delivered to plants more efficiently. Several legislative efforts have failed in recent years to improve recreational river access, or to permit irrigation efficiency improvements to leave instream flow savings in the stream, but Colorado's Water Plan fails to mention any of these legislative efforts or why they have failed. Making irrigation practices more efficient is the single most important improvement that we can make to Colorado streams, particularly on the West Slope.

8. **Explain projected farm acreage lost to city sprawl**. Colorado's Water Plan refers frequently to agriculture lost to city sprawl, but it does not summarize it for every basin like the graph below does.[9] Also, "sprawl" is a more descriptive term than "urbanization" which could refer to going to more plays or eating out more.

[9] SWSI 2010 estimates that 154,600 acres will be lost to urbanization, and these numbers were used to create the graph. See, SWSI 2010, Table 4-11, Future Irrigated Acres by River Basin, page 4-27 (So Platte includes 300 & 600 acres lost from Repub Basin), http://cwcb.state.co.us/water-management/water-supply-planning/Documents/SWSI2010/SWSI2010.pdf.



9. **Rio Grande "may" lose 80,000 acres**; Section 6.2 on page 133. If this dryup is certain, then "may" ought to be replaced with "must." Colorado's Water Plan says that 19 counties and 20% of the population rely on groundwater, but it does not state how much of this groundwater use is unsustainable; Section 4 on page 59.

10. **What is the Arkansas Basin's "critical IPP**." Please identify the critical IPP that the Arkansas BIP references on page 130 in Section 6.2. The Arkansas Basin ignores land use in its basin implementation plan (Section 6.3.3 on page 184). It should adopt a municipal gpcd target and outdoor landscaping water budgets (both of which are absent from municipal conservation tools described in Section 6.3.1 on page 166), and come up with a concrete land use plan that attempts to preserve agriculture and reduce municipal water consumption before embarking on a critical IPP.

11. **Explain Colorado's water budget**. We now consume 5.4 million acre feet a year in Colorado, but 1 maf of this, nearly 20%, comes from unsustainable groundwater mining as indicated by Jeff Lukas (author of *Climate Change in Colorado*, CWCB 2014) in the table below. We are retiring 109,000 acres in the Republican River Basin and 80,000 acres in the Rio Grande Basin because we are not meeting Compact obligations, and the Front Range is mining the Denver Aquifer by about 30,000 acre feet per year. Colorado's Water Plan describes the Ogallala Aquifer as "one of the largest water bodies in the United States," but fails to emphasize that it is being unsustainably mined (pages 46-47). Scientists predict it could dry up within 75 years, and as soon as 25 years at current withdrawal rates in western Kansas and southeastern Colorado where it is shallow.[10]

[10] McGuire et al., "Water in Storage and Approaches to Ground Water Management, High Plains Aquifer," USGS, Circular 1243, 2000.

Colorado's water balance	Million acre-feet	%	Explanation
Precipitation	95	100%	
Instant evapotranspiration	-80	-84%	Hotter temperatures will exacerbate this
Equals: Amount left on surface	15	16%	This ends up in rivers
Less: Water owed to other states in interstate compacts	-10.6	-11%	
Equals: Amount left for Colorado	4.4	5%	
Less: Water consumed in Colorado	5.4	6%	
Equals: Deficit	-1.0	-1%	Groundwater mining supplies this

III. Secure safe drinking water

1. **Low flows are the problem**. Colorado's Water Plan correctly states that "Lower streamflows could lead to increasing concentrations of pollutants" in Table 4.1 on page 66. However, it never suggests that increasing stream flows is a solution, despite using the word "flow" 467 times in the plan. The Water Quality Control Commission is barred by statute from ever acquiring instream flows to improve water quality; Section 7.3, page 294. Colorado's Water Plan says the relationship between water quality and quantity is very complex on page 292, yet generally the solution is to add more water by increasing stream flows.
2. **The problem, again, is Colorado water law**. The Water Quality Control Commission must consult with the CWCB before taking any action that could cause material injury to water rights. Section 7.3, page 297. This puts 19th century water rights ahead of municipal drinking water. British Columbia recently overhauled its 105-year water law by passing the Water Sustainability Act, and it permits the water minister to curtail diversions if necessary to meet critical environmental flow thresholds.[11] There is no comparable curtailment authority in Colorado.

IV. Develop local water conscious land use strategies

1. **Discuss sustainable growth**. Colorado's Water Plan opens with the statement that people love Colorado, as evidenced by the state's population growth from 1 million in 1930 to 5 million in 2005. At that rate of growth (2.2% per year), Colorado will have 28 million people in 2090. Our

[11] Water Sustainability Act, Section 88, available online at http://engage.gov.bc.ca/watersustainabilityact/.

population growth rate will be 1.7% per year if we grow to 10 million people by 2050 under the Hot Growth Scenario. Colorado's Water Plan claims that this growth is inevitable in Section 5 on page 80. Failing to address what population is sustainable while blithely stating that growth is inevitable is irresponsible.

On page 79 the plan states half the population growth is due to residents born in Colorado. The US Census Bureau projects that US indigenous population growth (births minus deaths) is 0.5% of the population in 2015, dropping steadily to 0.2% by 2060. If Colorado grows at the same indigenous growth rate, our population would be 6.2 million in 2060, and 6.8 million in 2100, compared to 5.4 million in 2015. If we grow to 10 million in 2050, the Hot Growth scenario, it turns out that only 14% is indigenous growth. The rest is from 3.9 million people moving here.[12]

2. **Planning for the Hot Growth Scenario is not realistic**. Colorado's Water Plan says that we should prepare for all 5 scenarios in Section 6.1 on page 100, including the Hot Growth scenario which has the highest water demands and least municipal conservation. The Colorado Basin Roundtable's six themes can only be achieved under the Adaptive Innovation scenario. The plan should delete the sentence at the bottom of page 100, "The challenge is not to pick the most likely or attractive future; rather, it is to develop the capacity to develop for all of them."

3. **SSI growth ought to address renewable energy**. The plan's increased SSI demand by 2050 of 50,000 to 130,000 af on page 86 is likely too high for two reasons: (1) it includes 40,000 af for oil shale development in the Yampa Basin, and (2) per capita water demands for thermoelectric power generation will increase 12% from 11.4 gpcd to 12.8 gpcd.[13] This is counter to the nation's plan to reduce carbon emissions by 30% by 2030 from 2005 levels. The plan should indicate how the SSI figures for power generation were derived, and what percentage of Colorado's electricity demand is expected to come from renewable energy sources in 2035 or 2050.

4. **Is local control an excuse to not conserve water?** Under 50% of Colorado cities have impact fees; page 24. The low conservation strategy anticipates that only 10% of utilities will have water budget-based water rates, only 5% of utilities will charge conservation-oriented tap fees, and less than 50% of cities and counties will have conservation-oriented plumbing and building codes in 2050; table 5-2 on page 83. The medium conservation targets are not much better. Given the Colorado River Basin's anticipated population growth, increasing temperatures, and expected 3.2 million acre foot decline in Colorado River supplies, the low conservation targets are shocking.

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[12] US Census Bureau 2012 National Population Projections: Summary Tables, Table 1. Projections of the Population and Components of Change for the United States: 2015 to 2060 (NP2012-T1), https://www.census.gov/population/projections/data/national/2012/summarytables.html.

[13] CWP tracks SWSI 2010 which projects that SSI needs increase from 187,760 af in 2008 to 322,090 af in 2050 under the high growth scenario. This includes 41,800 af for oil shale development in the Yampa Basin, which is looking less likely. Total acre feet needed for thermoelectric power generation increases from 64,500 af (11.4 gpcd, based on 2008 population of 5.05 million) to 143,000 af (12.8 gpcd, assuming 10 million 2050 population). SWSI 2010, Table 4-8, Summary of Self-Supplied Industry Demands by basin, page 4-16, http://cwcb.state.co.us/water-management/water-supply-planning/Documents/SWSI2010/SWSI2010.pdf.

The plan could address why it has been so hard to reach consensus in Colorado to practice more aggressive municipal conservation. The common explanation−concern for local control−is unsatisfactory. Colorado's Water Plan states that municipal conservation is the cheapest water available (Section 6.3.1 on page 159), and that higher levels of conservation will require broad political and public support (page 169), but it offers no recommendations about how to obtain that political support.

Karen Raucher of Stratus Consulting emphasized that utilities are likely the best source of information about water conservation and climate change at the January 2015 Water Congress convention. By deferring to "local control," the CWCB has abdicated its leadership role. Could it be that "local control" is a euphemism masking agriculture's fear that any limits on municipal water use will reduce demand for irrigation water, thus reducing its value for farmers who want to "sell and dry?"

5. **Provide a model water-smart land use code.** As a member of the Roaring Fork Planning Commission, Eagle County's planning and zoning board, I recently reviewed and suggested edits to Eagle County's land use code for water use in development applications. Eagle County's draft ordinance had minimal references to water-smart fixtures, xeriscape plant water requirements, bluegrass turf areas, or water budgets.[14] The CWCB could greatly aid the state by providing a model land use code, especially for smaller planning departments in rural Colorado.

6. **Population growth is causing groundwater reliance.** Colorado's Water Plan states in Section 3 on page 45, "*The lack of new major water storage* in recent decades . . . has led to reliance on nonrenewable groundwater in Douglas and Arapahoe Counties (emphasis added)." I recommend that you delete this sentence. I believe that groundwater reliance results from runaway population growth and Colorado law that permits it to occur (Nevada law forbids groundwater mining). Douglas County has led the nation in population growth for much of the last 30 years, growing 8.4% per year from 25,153 to 285,465 residents from 1980 to 2010.

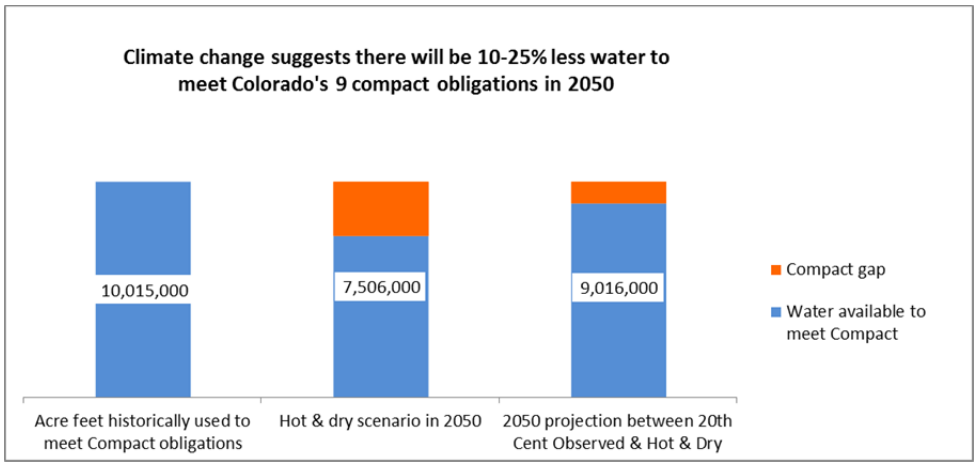
7. **The South Platte and Arkansas Roundtables recommend Low to Medium Conservation** but the Colorado, Gunnison, and Southwest roundtables all recommend that the state adopt high municipal conservation; Section 6.3.3 on pages 184-188. The plan positions the South Platte/Metro roundtable as the statewide leader in conservation in Section 6.3.1 on page 168, but when it comes to integrating land and water planning, the South Platte/Metro roundtables meekly suggest on page 187 that this deserves further study (even though 92% of the participants at a 2013 joint Front Range roundtable meeting said land and water planning should be coordinated; see page 182). The Arkansas roundtable basin implementation plan all but ignores land use; page 184. It is misleading to imply the South Platte/Metro roundtables are leaders in municipal conservation. The Colorado, Gunnison, and Southwest roundtables are the leaders because they are the only ones recommending high municipal conservation going forward in their basin implementation plans.

8. **Building in the wildland urban interface is not addressed.** The plan discusses forest health and the risk of post-fire erosion in Section 7 on page 281, but it does not address the risk of building in the WUI. Two of the country's most expensive fires have occurred in the past 5 years in Black Forest and Waldo Canyon near Colorado Springs, and today we are rebuilding the homes that burned in the WUI there on the same lots. The map on page 282 indicating the risk of post-fire erosion is coincidentally describing the region where WUI development is greatest, but Colorado's Water Plan ignores building in the WUI.

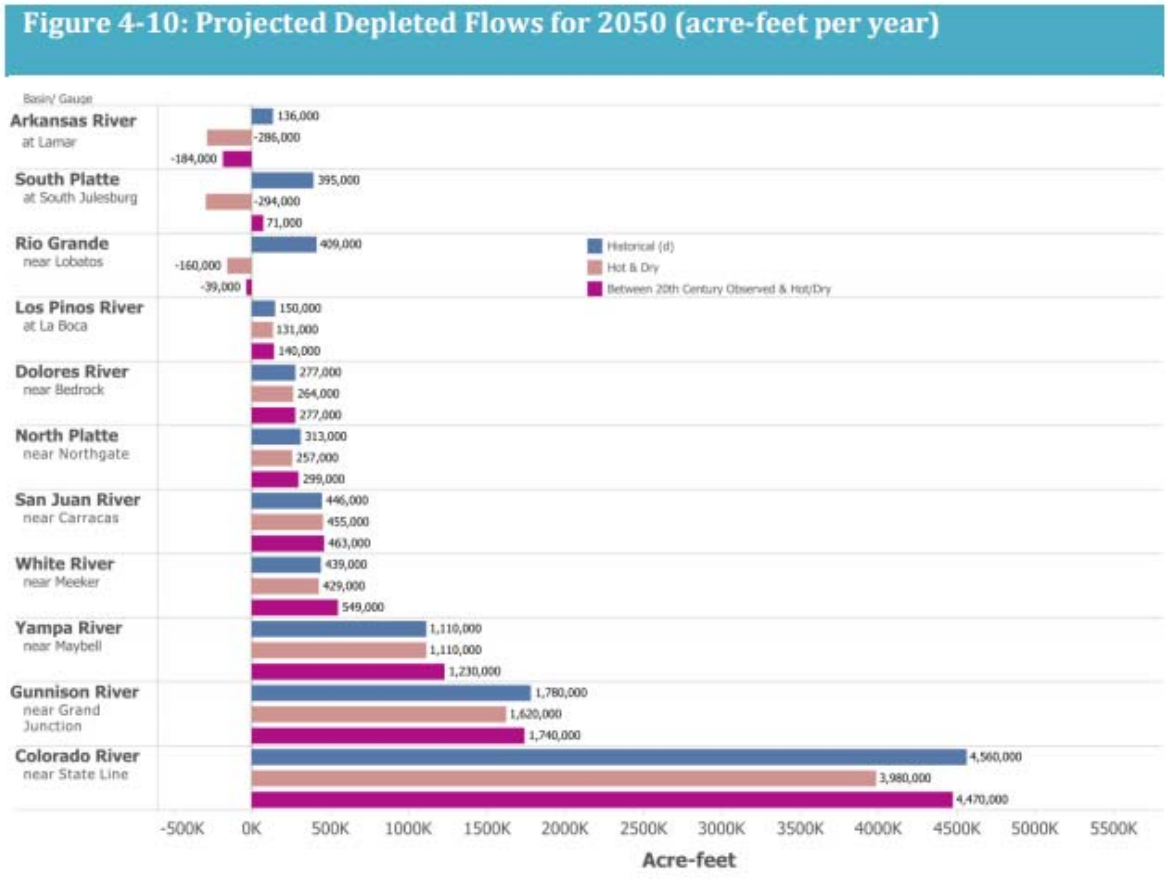
V. Assure dependable basin administration

1. **The Shoshone Call is a matter of statewide not regional concern.** This and the Cameo call are crucial to maintaining the health of the Colorado River and the communities that depend on it. The plan mentions the Shoshone Call on in Section 3 page 51, but describes it in provincial terms: "the Shoshone Hydroelectric Plant [is] identified as crucial to meeting the [Basin's] fifth theme." We believe these two water rights have statewide implications, both to protect West Slope stream health, and also because so many Colorado residents recreate on the West Slope.
2. **What is the risk of a Compact Call?** Colorado's Water Plan states in Section 4 on page 71 that dust on snow events could reduce Colorado River runoff by 5%; if so, how much less water will be available for development by Upper Basin States and Colorado? The plan does not address the risk of further developing water in the Colorado River basin.
3. **Comment on how fast other Colorado River Basin states growing.** In Appendix B, you state how other basin states are working to meet their gap. Demographers predict that 70 million people will rely on the Colorado River by mid-century, up from nearly 40 million today. Five of the seven fastest growing states over the past 70 years are in the Colorado River Basin: Nevada (1st fastest growing at 4.7% per year), Arizona (second fastest, 3.7%), California (fifth fastest, 2.4%), Utah (sixth fastest, 2.3%), and Colorado (seventh fastest, 2.2%). New Mexico is the tenth fastest growing state, at 2% per year. It will become harder than ever to evade a Compact Call in the face of this growth.
4. **West Slope agriculture will bear a Compact Call.** The plan states in Section 8 on page 312 that California, Arizona, and Nevada have contributed $2 million to a fund to operate pilot projects to reduce agricultural water consumption. How does this impact western Colorado? Colorado's Water Plan does not explain how the water bank will be administered or what farmers can participate. Will the water bank be operated to favor streams that have the most depleted flows in order to generate the greatest environmental benefit?
5. **The graph of projected 2050 depleted flows in figure 4-10 needs a summary table.** This is a very important graph, but it fails to highlight that there will be 10-25% less water available to meet the state's 9 compact obligations by 2050 as the following graph does.

This graph should be added to Colorado's Water Plan:



The existing graph on page 70 in Colorado's Water Plan is shown below. It obscures the pending shortage, and it is hard to know what to glean from this graph. It also double-counts the Gunnison river, since it is counted in both the Gunnison and Colorado River totals.



Projected depleted flows for 2050 in acre-feet per year at eleven different sites around the state using the aforemntioned classifications of historical, hot and dry and between 20th century observed and hot and dry.

6. **Water law reform is understated in the plan.** Colorado's Water Plan states that there is little waste in agricultural water use and there is no incentive to divert more than crops can consume (Section 6.3.4, pages 193-194). It also states that prior appropriation is remarkably flexible (Section 9.1, page 325). These statements are hard to justify. Since 1993, CDSS diversion records indicate that the 12 largest ditches on the Crystal River have averaged nearly 62,000 acre feet diversions each year, nearly 23 acre feet for each of the 2,714 acres that are irrigated according to GIS records. On the Roaring Fork River, CDSS diversion records indicate that the 12 largest ditches have diverted nearly 115,000 acre feet annually on average, 44 acre-feet for each of the 2,625 irrigated acres identified in GIS mapping. In the Grand Valley, the two largest irrigation ditches divert 11 acre-feet per year to irrigate 42,000 agricultural acres and 27,000 urban acres. Yet, agricultural consumption is typically only about 2 acre-feet per year and blue grass consumption slightly higher at 2.5 acre feet per year.

   At the Colorado Basin roundtable meeting on June 22, 2015, engineer Seth Mason was asked, "How important is the perception by Crystal River irrigators that if they don't divert all the water they can they will lose it?" He simply answered, "Tons." In a recent Pro Publica series on the Colorado River, Jim Lochhead said, "I would abolish Colorado water rights law and start all over again with a clean slate."[15] Colorado water law is high maintenance. The Colorado Basin Roundtable has identified water law reform as crucial to efficient and dependable basin administration. Colorado's Water Plan skirts this important issue.

7. **Concern with reforming the permitting process.** Colorado's Water Plan proposes to speed up the permitting time for new projects such as the Moffat or Windy Gap firming projects by having the CDPHE and DNR endorse a project before the Final Environmental Impact Statement or Record of Decision are released; Figure 9.4-2, page 364. Many Colorado Basin Roundtable members are likewise concerned about the lengthy and high cost of permitting. However, having the state endorse a project before the EIS and ROD are released will further politicize what is already a very political process.

   Lane Wyatt of the Northwest Colorado Council of Governments recommends an alternative way to speed up the process, called *frontloading,* where all stakeholders meet and describe their concerns and objectives as soon as a project is proposed. In my opinion, much permitting delay results from parties trying to limit the scope of environmental review so that certain stakeholder concerns are kept off the table. An example of this is the South Platte/Metro roundtables' recommendation that lower gpcd targets should only be considered a "demand reducer" rather than a "least damaging alternative" (Table 9.4-3, page 371, discussed further below).

8. **How effective is cloud-seeding?** The plan references cloud-seeding on in Chapter 4 on page 75, but a recent University of Wyoming study conducted in the Medicine Bow Mountains just north

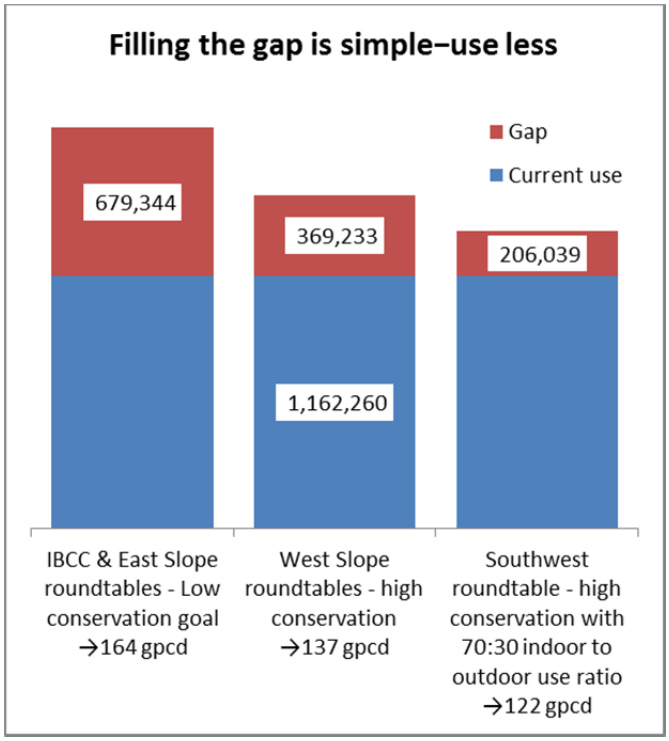
[15] Lustgarten, Abrahm, "Use It or Lose It," ProPublica, June 8, 2015, https://projects.propublica.org/killing-the-colorado/story/wasting-water-out-west-use-it-or-lose-it.

of Colorado suggests runoff barely increased from 0.4% to 3.7%.[16] The reader may get the mistaken impression that cloud-seeding will solve Colorado's water problems.

9. **The Conceptual Framework is not an agreement.** In many places Colorado's Water Plan refers to the Conceptual Framework as a "conceptual agreement." It should be referenced throughout the plan as a Conceptual Framework.

VI. Encourage a high level of basin wide conservation

1. **What effect would the Southwest roundtable's 70:30 conservation target have?** The Southwest roundtable recommends that only 30% of water used in new real estate development can be used outdoors, with 70% used indoors. Colorado's Water Plan mentions this in several locations (pages 122, 136, 170, 188, page 13 of the July 1, 2014, IBCC Conceptual Agreement draft in Appendix D). If the state adopted this policy, how much would it lower future demand? The graph below attempts to explain this relationship, based on statewide conservation targets. The gap is directly related to how much water Colorado residents use.



2. **What is breakeven gpcd?** If we decided to minimize agricultural dryup and agreed there was no more water available to divert from streams, what gpcd target would citizens have to meet? I estimate 120 gpcd, significantly less than the 205 gpcd we used in 2008 as reported in SWSI

[16] Study: Cloud seeding increased snowfall, AZ Central, Channel 12, December 11, 2014, http://www.azcentral.com/story/news/local/arizona/2014/12/10/study-cloud-seeding-increased-snowfall/20229349/.

2010[17] It is also 22% lower than Denver Water's projected 129 gpcd by 2050 (Table 6.3 1-2, page 169), since Denver Water is not including SSI demand of 25 gpcd in its gpcd target (increasing total daily citizen per capita use to 154 gpcd). It appears the South Platte/Metro basin is encouraging universal use of gpcd numbers since it suggests "further standardization of the term 'per capita water use' " on page 169. This would help us adopt statewide indoor and outdoor gpcd targets by 2035 and 2050.

Western Resource Advocates recommends a 1% reduction per year in municipal water use between 2010 and 2050, which would reduce per capita water use from 205 gpcd to 123 gpcd over 40 years.[18] Denver has been on this downward trajectory since the 2002 drought. The plan fails to discuss the 1% per year reduction recommended in *Filling the Gap* in the municipal conservation actions recommended on pages 171. Albuquerque residents now use 135 gpcd.[19]

3. **Is active conservation borne by existing residents or only future residents?** It is unclear whether the active conservation savings described in Table 5-1 on Page 82 come from current or future residents. Are current residents expected to use less water?

4. **Demand management should not be a tool of last resort.** Colorado's Water Plan claims that demand management, a confusing term that masks a simple concept–using less water–should be the last tool out of the box (Section 9, page 327). In contrast, the Colorado Basin roundtable believes that a new transmountain diversion should be the last tool out of the box, and that efficiency, conservation and reuse should be exhausted before any additional transmountain diversions occur.[20]

5. **The South Platte/Metro roundtables say conservation should be a "demand reducer," rather than a "least damaging alternative"** (Section 9.4, page 371). This difference means that water gpcd use can only be used to estimate future demand (such as by stating that a project serving 25,000 people using 150 gpcd generates demand of 2,100 af, while 120 gpcd would require only 1,680 af). By implication, the South Platte/Metro roundtable claims that it is inappropriate to suggest that reducing water use to 120 gpcd is a less damaging alternative. This is further evidence of the South Platte/Metro roundtables' unwillingness to conserve.

6. **What is the clear and concise need for a projects bill?** The plan discusses several ways to fund a new projects bill in Chapter 9. The 416-page plan intimates the projects identified in the basin implementation plans will serve as the "clear and concise need" (Section 9, page 339). The plan lists 987 projects in the 8 river basins that cost a total of $1.645 billion, an average of $1.66

[17] SWSI 2010 determined that 5,051,500 residents used 1,162,500 acre feet in 2008. This amounts to 205.4 gpcd: (205.4 gpcd x 5,051,500 pop'l x 365 days) / (325,851 gals in af) = 1,162,500 total 2008 water demand. See, SWSI 2010, Table 4-9, Summary of M&I and SSI Demands for Each Basin and Statewide (AFY), page 4-17, http://cwcb.state.co.us/water-management/water-supply-planning/Documents/SWSI2010/SWSI2010.pdf

[18] Filling the Gap, Western Resource Advocates, 2011, page 24.

[19] Gallons per capita per day (gpcd) use is probably down close to 135, which is the goal the ABCWUA set in 2013 to reach by 2024; Fleck, John, "Total ABQ water use lowest in 30 years," Albuquerque Journal, January 11, 2014, http://www.abqjournal.com/334881/news/albuquerques-total-water-use-in-2013-lowest-in-30-years.html/attachment/albuquerque-used-less-water-last-yerar#main.

[20] Colorado Basin Whitepaper, 2013, page 6.

million each.[21] But this is only a fraction (8%) of the $20 billion the plan says is needed for Colorado's water infrastructure in Section 9.2 on page 332. The plan does not compare the cost of building new projects with the cost of conservation, nor does it estimate the need for new projects under lower population growth or higher conservation scenarios. Until the questions asked here and by the Colorado Basin roundtable are addressed, it is premature to prepare or support a projects bill referendum for the public to vote upon.

Conclusion - What Colorado's Water Plan does not address:

1. What is the value of agriculture to our economy? How do we maximize it?
2. If Colorado had a policy of food sustainability, how many people can Colorado agriculture reasonably support today and under a future, dryer climate?
3. What is per capita gpcd use, and what is the breakeven gpcd necessary to attain the twin policy goals of keeping ag dryup to a minimum, and leaving as much water in streams as we can?
4. How effective are instream flows in low flow periods like the 2002 or 2012 droughts? What would it take to improve this?
5. If we had a policy to leave as much water in streams as possible, how would we do it?
6. What is the cost per acre foot of municipal conservation compared to new storage?

[21] 513 municipal & industrial and agricultural projects (totaling $892 million)are described in Section 6.5, pages 223-231, and 474 environmental projects totaling $752 million are described in Section 6.6 on pages 257-263.

PUBLIC INPUT ITEM 56

Tamara Desrosiers
1328 S. Oak St.
Cortez, CO 81321

September 8, 2015

COMMENTS: COLORADO WATER PLAN

Thank you for this chance to comment on the Colorado Water Plan. I would like to keep my comments short and to the point.

As an advocate for free-flowing rivers my entire adult life, I am well aware of the competing, conflicting interests surrounding water in Colorado, and the projected gaps in supply to meet the demand of an ever-growing population combined with daunting changes in climate.

As the bulk of that population growth is occurring on the Eastern slope, Western slope people like me are dead against any more trans-mountain diversions. Further development that threatens the environmental and recreational attributes of Western Slope streams and rivers is unacceptable. Extensive and enforceable water conservation measures should be the number one priority of this plan. Conservation is much cheaper and the right thing to do before more expensive and environmentally damaging diversions are built.

All new development should be required to institute water conservation measures. State financial resources should be designated for widespread agricultural conservation measures, such as lining ditches, canals, and efficient sprinkler systems, to keep our farmers in the business of farming instead of sub-dividing. Existing municipalities and water districts should institute appropriate metering for customers with prices that discourage consumption. All municipalities should adopt strict watering plans to prevent waste and evaporation in public parks and spaces, and where possible, new landscaping should incorporate low water-use designs.

Promoting and achieving conservation of the magnitude needed will be a huge challenge. Those who are drafting and implementing the proposed Colorado Water Plan must step up to the plate and fight the hard fight. Future generations will thank you, and the present ones might not be as hard to convince as you think.

I know: water flows uphill towards money. It's time to change the paradigm.

Tamara Desrosiers

PUBLIC INPUT ITEM 59

RECEPTION#: 761897, 09/14/2015 at 08:46:28 AM, 1 of 4, R: $0.00, D: $0.00, Kim Bonner, Routt County, CO

STATE OF COLORADO)
) ss
COUNTY OF ROUTT)

RESOLUTION NO. 2015-042

ROUTT COUNTY STATEMENT ON THE COLORADO WATER PLAN

WHEREAS, the Colorado River is the "heart" of Colorado and supplies the bulk of the water in the Colorado River Basin System (CRBS) and includes the headwaters traversing through the western part of the state, supporting some of the state's most significant agricultural, recreational, and tourism economies, the largest Western Slope city, and an expanding energy industry; and

WHEREAS, Colorado is an arid state and the basics of all plant and animal life depend upon water provided by the CRBS to which the Yampa River is a large tributary; and

WHEREAS, the CRBS is home to numerous wilderness areas, the most visited National Forest, world-class ski areas, and much of Colorado's recreation-based economy including significant water-based recreation; and

WHEREAS, the CRBS is the state's major "donor" basin of water, providing between 450,000 to 600,000 acre-feet to farms and cities of eastern Colorado and water to satisfy downstream obligations, and that the Yampa River provides a greater percentage of its flow than any other tributary to these needs, and that climate change, Colorado main stem gaps, undefined environmental and recreational needs, and additional diversions from Eastern Slope users will likely take approximately 140,000 acre-feet of additional water to be developed on the West Slope from the Colorado main stem; and

WHEREAS, the Yampa Programmatic Biological Opinion on the Yampa River recognizes an additional 50,000 acre-foot depletion from the Yampa River and its tributaries and may seek some additional amount pursuant to the Y/W/G Basin Implementation Plan, including recreational and environmental flows; and

WHEREAS, it has been rightfully stated that the past is no longer a guide to the future and the old paradigms in water supply no longer work, refuting the notion that increasing demands on the Front Range can always be met with a new supply from the Colorado River, or any other river; and

WHEREAS, compliance with the Colorado River Compacts is a statewide responsibility for Colorado River users on both sides of the Continental Divide, and that no one River Basin in particular should bear the risk of a compact curtailment caused by overdevelopment, and that compact administration in the Colorado River Basin must be avoided by transparent planning for sustainable water supplies, including consumptive and non-consumptive needs for all River Basins, and that strategies to avoid a compact curtailment must be borne equitably by all Colorado River users; and

WHEREAS, the Colorado River Basin Water Demand and Supply Study (CRBWDSS), and that a collaboration of the Bureau of Reclamation and the seven basin states concluded that there would likely be an average shortfall of more than 3 million acre-feet in the entire seven-state region by 2060, and that the Colorado River has already reached a point where water use outstrips water supply during dry periods, and that Lake Powell and Lake Mead have reached dangerously low levels; and

WHEREAS, given the situation outlined by Statewide Water Supply Initiative, the Colorado Water Conservation Board Climate Change Report and the CRBWDSS, it would be unrealistic to look for significant new supplies of water for the East Slope from the Colorado River as a primary source and firm yield, and that further depletion of water from the Colorado River increases the risk of a compact curtailment; and

WHEREAS, the four Western Slope roundtables envision a collective CRBS that is home to thriving communities benefiting from vibrant healthy rivers and outstanding water quality that balances all of the collective Colorado and Western Slope needs; and

WHEREAS, the Colorado Water Plan and its Conceptual Framework and its Seven Principles allows for input by local decision makers and the participation by all affected parties; and

WHEREAS, the Colorado Water Plan and its Conceptual Frame Work and its Seven Principles is a proactive approach to difficult water supply issues and will allow for collaborative solutions for all affected parties.

NOW, THEREFORE, IT IS HEREBY RESOLVED that the elected Routt County Commissioners support the draft Colorado Water Plan and its Conceptual Framework for the future consideration of any more transmountain diversions or major changes in the operation of current operations to transmountain diversion projects that would result in injury to any western slope basin; and

BE IT FURTHER RESOLVED that the Colorado Water Plan and its Conceptual Framework should be considered for application to the Basin Implementation Plans and particularly Identified Projects and Proposals that use in Basin Water Resources; and

BE IT FURTHER RESOLVED that the Colorado Water Plan's Conceptual Framework provides an effective starting point for an IBCC or other process enabling the participation and agreement by all of the affected and/or impacted county(s); and

BE IT FURTHER RESOLVED, in consideration of the Colorado Water Plan that has been mandated by Governor Hickenlooper, Routt County Commissioners support the following West Slope principles:

1) Solutions in the Colorado Water Plan (CWP) to supply water for growth and development in one part of the state should not override land use plans and regulations adopted by local governments in the part of the state from which water will be taken, specifically locally adopted 1041 regulations.

2) The CPW should protect/enhance, not threaten the economic, environmental, and social well-being of the West Slope and should provide for water allocation for future growth based upon the unused native flows in each River basin.

3) The CWP should identify a process and requirements for each basin to exhaust available water supply within its own basin before planning diversions from another area of the state. Conservation, reuse, and sound land-use approval principles insuring a sustainable water supply prior to development should be integral to providing for in basin uses when planning for new growth.

4) The CWP should outline mechanisms and responsible parties to mitigate the risk of potential compact curtailment of the Colorado River. For example, the CWP should adopt low-risk legal and hydrologic assumptions related to Colorado's obligations order to minimize the risk of curtailment of Colorado's apportionment of Colorado River basin water.

5) The State should not assume a role as a proponent of a water project until the State regulatory process has been completed and the project has been agreed to by the impacted counties, conservancy districts, and conservation districts in the area from which the water would be diverted.

6) Users and stakeholders in the Yampa Basin should insist through negotiations under the Seven Principles of the Draft Conceptual Framework that any plan or program for a new transmountain diversion on the Yampa River must fully protect the priority of existing water rights decrees and changes thereto and a reasonable increment of future diversion, storage, and uses on the Yampa River system from increased risk of curtailment under a compact curtailment scenario and from any administration resulting from operations of or river calls from such new transmountain diversion.

ADOPTED this 8 day of September, 2015.

BY THE BOARD OF COUNTY COMMISSIONERS, ROUTT COUNTY, COLORADO.

Douglas B. Monger, Chairman

Vote: Timothy V. Corrigan (Aye)(Nay)(Absent)
Cari Hermacinski (Aye)(Nay)(Absent)
Douglas B. Monger (Aye)(Nay)(Absent)

ATTEST: Kim Bonner

By Vicki L Weber, Deputy

Kim Bonner
Routt County Clerk and Recorder

COLORADO SEAL 1877 ROUTT COUNTY

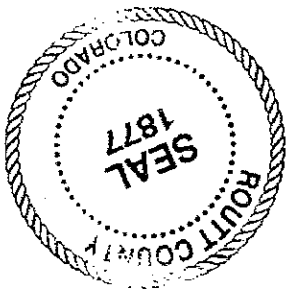
Upon motion duly made and seconded the foregoing Resolution was adopted by the

following vote:

STATE OF COLORADO)
)ss.
COUNTY OF ROUTT)

I, Kim Bonner, County Clerk and ex-officio Clerk of the Board of County Commissioners in and for the County and State aforesaid do hereby certify that the annexed and foregoing Resolution is truly copied from the Records of the Proceedings of the Board of County Commissioners for said Routt County, now in my office.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the seal of said County, at Steamboat Springs, this 14 day of September, A.D. 2015.



County Clerk and ex-officio Clerk of
The Board of County Commissioners

Kim Bonner

By Vicki J. Wolter, Deputy Clerk

PUBLIC INPUT ITEM 60

RESOLUTION OF THE BOARD OF COUNTY COMMISSIONERS
OF PITKIN COUNTY, COLORADO
SUPPORTING THE DRAFT COLORADO'S WATER
PLAN CONCEPTUAL FRAMEWORK

RESOLUTION NO. 072 -2015

1. WHEREAS, the collective Colorado River Basin is the "heart" of Colorado. The basin holds the headwaters of the Colorado River that form the mainstem of the river, some of the state's most significant agriculture, the largest West Slope city and a large, expanding energy industry; and

2. WHEREAS, the Colorado Basin is home to the most-visited national forest and much of Colorado's recreation-based economy, including significant river-based recreation; and

3. WHEREAS, the collective Colorado Basin is the state's major "donor" basin of water, providing between 450,000 to 600,000 acre-feet to farms and cities of eastern Colorado. Climate change, West Slope Gaps, undefined environmental and recreational needs and existing IPP's will likely take approximately 140,000 acre feet of additional water, to be developed on the West Slope and Colorado Basin; and

4. WHEREAS, it has been rightfully stated that the past is no longer a guide to the future, and the old paradigms in water supply no longer work. The notion that increasing demands on the Front Range can always be met with a new supply from the Colorado River, or any other river, are no longer valid. We must develop a plan that is truly proactive, not reactive. We cannot afford to wait until crisis becomes the guide behind our decisions; and

5. WHEREAS, compliance with the Colorado River Compacts is a **statewide** responsibility because Colorado River users reside on both sides of the Continental Divide. Existing users should not bear the risk of a compact curtailment caused by overdevelopment of the remaining increment of the Colorado River. Compact administration in the Colorado River Basin must be avoided. Impacts from a compact curtailment, or strategies to avoid a compact curtailment, must be borne equitably by all Colorado River users; and

6. WHEREAS, the Colorado River Basin Water Demand and Supply Study, a collaboration of the Bureau of Reclamation (BOR) and the seven basin states, concluded that there would likely be an average shortfall of more than 3 million acre-feet in the entire seven-state region by 2060. The Colorado River has already reached a point where water supply is outstripped by water use.

7. WHEREAS, the four western slope roundtables envision a collective Colorado River basin that is home to thriving communities benefiting from vibrant,

healthy rivers and outstanding water quality that provides for all of the collective Colorado and western slope needs.

8. WHEREAS, in consideration of the Colorado Water Plan that has been mandated by Governor Hickenlooper, the Colorado River Basin Roundtable adopted the following West Slope Principles:

a. Solutions in the Colorado Water Plan (CWP) to supply water for growth and development in one part of the state should not over-ride land use plans and regulations adopted by local governments in the part of the state from which water will be taken.

b. The CWP should protect and not threaten the economic, environmental, and social well-being of the West Slope.

c. The CWP should identify a process and requirements for each basin to exhaust available water supply within its own basin before planning diversions from another area of the state.

d. The CWP should outline mechanisms to mitigate the risk of potential Compact curtailment of the Colorado River. For example, the CWP should adopt low-risk legal and hydrologic assumptions related to Colorado's obligations under the Colorado River Compact and the Upper Colorado River Basin Compact in order to minimize the risk of curtailment on existing uses of Colorado River basin water.

e. The State should not assume a role as a proponent of a water project until the State regulatory process has been completed and the project has been agreed to by the impacted counties, conservancy districts and conservation districts in the area from which water would be diverted.

9. WHEREAS, given the situation outlined by SWSI, the CWCB Climate Change Report and the Colorado River Basin Water Supply and Demand Study, it would be unrealistic to look for significant new supplies of water for the East Slope from the Colorado River as a primary source. Any further depletion of water from the Colorado River increases the risk of a compact curtailment; and

10. WHEREAS, the Colorado Water Plan's Conceptual Framework and its Seven Principles allows for input by local decision makers and the participation by all affected parties; and

11. WHEREAS, the Colorado Water Plan's Conceptual Framework and its Seven Principles is a proactive approach to difficult water supply issues and will allow for collaborative solutions for all affected parties; and

NOW, THEREFORE, BE IT RESOLVED that the Board of County Commissioners support the draft Colorado Water Plan's Conceptual Framework for the

future consideration of any more transmountain diversions or major changes in the operation of existing projects.

BE IT FURTHER RESOLVED that the Colorado Water Plan's Conceptual Framework should be considered for application to Identified Projects and Proposals (IPP).

BE IT FURTHER RESOLVED that the Colorado Water Plan's Conceptual Framework provides an effective process for the participation and agreement by all of the affected and/or impacted county(s).

INTRODUCED, READ, AND ADOPTED ON THE 9TH DAY OF SEPTEMBER 2015.

ATTEST:

By _____
Jeanette Jones
Deputy County Clerk

BOARD OF COUNTY COMMISSIONERS

By: _____
Steven F. Child, Chair

Date: 9/15/2015

PUBLIC INPUT ITEM 61

Gunnison County Board of County Commissioners
Phone: (970) 641–0248 • Fax: (970) 641–3061
Email: bocc@gunnisoncounty.org • www.GunnisonCounty.org

September 15, 2015

Governor John Hickenlooper
Colorado Water Conservation Board
Diane Hoppe, Chair

VIA EMAIL: COwaterplan@state.co.us

Re: Board of County Commissioners of Gunnison County, Colorado ("Gunnison County") Comments on July 2015 Draft of the Colorado Water Plan

Honorable Governor Hickenlooper, CWCB Chair Hoppe, and CWCB Members:

Gunnison County honors and supports the forethought, willingness and –frankly- the courage of the State of Colorado to create a water policy in a multi-partisan, transparent and publically accessible manner. The following comments are intended to be supportive of, and strengthen, that process and the resultant document.

Gunnison County has been a collegial, effective partner in helping shape state and local, policies and implementing solutions to some of the thorniest problems facing our State –including effective regulation of oil and gas development and improved implementation of the Federal Endangered Species Act. With regard to the proposed Draft Plan, Gunnison County continues to work with State officials and staff, the Colorado River Water Conservation District, the Upper Gunnison River Water Conservancy District, the Gunnison Basin 1177 Roundtable, the Northwest Colorado Council of Governments Water Quality/Quantity Committee, and others.

In this letter we will not attempt to synthesize the comments of our colleagues, which we support, but rather, offer several additional considerations for inclusion in the Draft Plan.

We do attach to this letter a copy of the "Gunnison County Position Statement: Protection and Development of Water Resources in Gunnison County and the Gunnison River Basin", which will assist in identifying the foundational Policy of Gunnison County regarding water use.

Comments
Chapter 2. Our Legal and Institutional Setting

The Draft Plan, section 2.4, at page 25, "Local, State, Tribal, and Federal Water Planning, Approval, and Permitting" makes a very brief mention of local government authority that reads in total: "Local governments have jurisdiction and authority over parts of development projects and can request mitigation projects and can request mitigation of any effects resulting from proposed water projects because of their 1041 powers, which are detailed below (section 9.4) under the State planning section."

Section 9.4, at pages 356 and 357, refers generally to local government authority to review, approve or approve with conditions proposed water projects. In particular, this section states that "(l)ocal governments may not pass regulations that are completely prohibitive of the building of municipal water facilities and expansion of existing projects."

This characterization of local authority may be interpreted to truncate the authority of a local permitting authority to deny a 1041 permit for a project that cannot satisfy local government requirements or

conditions that are legally imposed under H.B. 1041 and the local governments' implementation regulations. While Gunnison County appreciates the qualification that "(g)enerally, development may only proceed if consistent with the environmental and developmental goals of the local communities as outlined in their 1041 regulations" (Page 356), this statement ought to be clarified and strengthened.

Trans-mountain Diversion and Basin of Origin Protection

A trans-mountain diversion occurs when water is exported from one watershed to another. Western Slope water diverted to points east of the Continental Divide supplies many Front Range Water users. This imported water is 100 percent consumptive because it can be used to extinction with no legal requirement that any of it ever flow back to its basin of origin.

A fundamental issue, as yet unaddressed by Colorado law or the Draft Plan, is that a requirement be in place for basin of origin protection plan –approved by the basin of origin- as a prerequisite for exporting or removing water from one water basin to other areas of the state. Such a plan would have to include measures for the design, construction and operation of water exportation facilities so that present and future beneficial consumptive and non-consumptive water uses in the basin of origin will not be impaired, nor increased in cost, to the expense or detriment of water users in the basin of origin.

While "The Colorado Water for the 21st Century Interbasin Compact Committee Charter" began a discussion of this issue, the issue has not been fully addressed or resolved in the Draft Plan.

Condemnation of Water Rights

The potential for condemnation of water –particularly the exercise by one political jurisdiction to exercise condemnation extraterritorially to obtain water from the geography of another jurisdiction- remains an issue not yet fully addressed in law or policy.

Gunnison County respectfully suggests that the Draft Plan explicitly establish a State policy position – if not the intent of the State to support legislation – that would oppose such condemnation authority even if the condemnation were supported by a purported condemner's "determination of necessity".

In particular, such a State policy should articulate a presumption against trans-mountain eminent domain transfer of water, and propose initiation of legislation that a condemner's determination of "necessity" for exercise of eminent domain not only be subject to review as required by C.R.S. § 38-6-207, but also be reviewable and require approval by the government of general jurisdiction in the basin of origin, based on the benefits and detriments to the basin of origin, and be reviewable by the judiciary.

Please contact us with any questions.

Sincerely,

Paula Swenson, Chairperson Phil Chamberland, Commissioner Jonathan Houck, Commissioner

cc: James Eklund
Frank Kugel
Bill Trampe
Rufus Wilderson

Gunnison County
COLORADO

GUNNISON COUNTY POSITION STATEMENT: PROTECTION AND DEVELOPMENT OF WATER RESOURCES IN GUNNISON COUNTY AND THE GUNNISON RIVER BASIN

INTRODUCTION:

The essence of Gunnison County's ability to survive and prosper historically has been, and will continue to be, its ability to have consistent, plentiful and clean water. Like many western communities, the county has experienced a series of economic cycles. As the need arises, the community assesses itself and its future. What has consistently emerged from these exercises has been the clear recognition that the area's natural environment is its most important asset.

The future of the County is directly dependent upon the community's ability to preserve and carefully build upon its natural resource assets. Its unique and fragile setting provides an environment that attracts recreationists and tourists, supports an excellent college and an historical and valuable agricultural industry.

The natural environment is the heart of the economic and social well-being of Gunnison County, both now and in its future and water is its lifeblood.

It is upon these realities, and within the following policies, that Gunnison County establishes its position on water resources protection and development.

*****

INTERDEPENDENCE OF ECONOMIC DEVELOPMENT AND ENVIRONMENTAL PROTECTION IN GUNNISON COUNTY'S FUTURE:

It is the policy of Gunnison County to encourage the identification of opportunities for a stable and diverse economic future for Gunnison County, and to support the protection and development of water resources for in-basin purposes which will realize those opportunities in a manner that is socially, environmentally and economically sound.

It is further the policy of Gunnison County:

- To support improvement and protection of ranching, water-based recreation and access on public lands.

- To encourage the development of water-based recreation programs which will return financial benefits to landowners who make their lands available for such activities.

- To ensure adequate water is available to support future growth in Gunnison County.

- To support voluntary improvements in public access to streams on private lands through a variety of methods such as, at their discretion, landowners' providing free or compensated access on their own lands, granting short term leases, granting easements, or entering into outright sales agreements with public entities.

- To encourage the development of systems to manage fishing and rafting access to streams and address such issues as trespassing, collection of fees, litter, damage to property including livestock, and maintenance and improvements of access facilities.

- To encourage the development of recreation facilities in the county including campgrounds, picnic areas, trails, whitewater park stream access, etc. which allow a variety of recreational experiences.

- To actively cooperate with other entities in regional and national marketing of recreation opportunities in the county.

PROTECTION OF WATER RESOURCES:

It is the policy of Gunnison County that land use and other activities carried out within the County should not adversely affect the availability or suitability of water for present or future uses in the county.

It is further the policy of Gunnison County:

- To encourage protection for economically important uses of water such as retaining or enhancing the productivity of agricultural lands, meeting municipal and domestic needs, and provide optimum instream flows and lake levels for fisheries and recreation within the county.

- To protect water resources for the purpose of maintaining the high quality of the water-dependent environment in the county.

- To encourage the protection and enhancement of riparian habitat because of the value of such habitat for benefiting water quality on-site and downstream.

- To encourage increased water use efficiency and the adoption of water saving measures by domestic water providers and users.

- To encourage the use of proven traditional, and non-traditional and innovative solutions, both structural and non-structural, to protect, retain and enhance water resources in the basin.

- To consider and research unintended consequences must be considered and researched when using non-traditional and innovative solutions and technologies.

- To recognitize the benefits of historical ranching and irrigation practices in the Gunnison basin in terms of recharging the aquifer. Indirect benefits include water supply for domestic wells and late season stream flows.

REGULATION OF WATER RESOURCES DEVELOPMENT:

It is the policy of Gunnison County to fully exercise its authority to ensure that the net effect of development, management, and utilization of water resources is not to generate significant adverse environmental, social or economic impacts to the County.

It is further the policy of the County:

- To ensure that water resource development will not significantly effect the existing quality and diversity of natural ecosystems within the county, including terrestrial and aquatic organisms and their habitats.

- To Consider and mitigate impacts of changes of use of water on historic water use and benefits.

- To ensure that water resource development will not cause a significantly adverse net effect to water quality, air quality, or soils and geologic conditions in the county.

- To ensure that water resource development will not cause a significantly adverse net effect to areas of historical, archeological, geological, or ecological importance in the county.

- To ensure that the citizens of Gunnison County will not experience a reduction in quality or availability of housing or public services and facilities as a result of water resource development in the county.

- To minimize conflicts and to regulate water resource development on the basis of impact of such development on other land uses.

- To ensure that water resource development will not cause a significantly adverse net effect to any segment of the local economy or on opportunities to expand such segments of the economy in the future.

- To ensure that any water resource development will not create an undue financial burden on residents of the county.

- To encourage development which will optimize existing water supply systems and wastewater facilities.

- To require that water supply systems and wastewater treatment facilities be designed, constructed, and maintained so as to permit efficient and economic provision of public services.

- To ensure that Federal and State permit requirements for water resource management and development projects are finalized prior to, or in tandem with local permits being issued.

- To minimize the risk of Gunnison County local governments having to fund mitigation measures of water resource development.

PUBLIC INVOLVEMENT:

It is the policy of Gunnison County to encourage and assist citizens to increase their knowledge of and participation in water resource issues.

It is further the policy of Gunnison County:

- To encourage coordination among local citizens organizations which have an interest in water resource issues.

- To encourage and support open review processes of water resource issues.

- To support public education concerning the statewide economic and environmental value of preserving the water resources of the county for use within the Gunnison basin.

- To support public education concerning increased water use efficiency.

- To support the repository at Western State College and other appropriate sites in the County for information concerning water resource development and protection issues.

LOCAL GOVERNMENT ISSUES:

To support coordination and definition of roles and responsibilities among local government entities including local municipalities and the Upper Gunnison River Water Conservancy District concerning water resource issues.

REGIONAL GOVERNMENT ISSUES:

It is the policy of Gunnison County to work cooperatively with governmental entities on a regional basis on common issues related to water.

It is further the policy of Gunnison County:

- To support cooperation among and communication with headwaters counties in other basins and other entities which share mutual interests concerning the future development of water resources in Colorado.

- To work cooperatively with West Slope water districts on state and local water issues of mutual concern and benefit.

- To support cooperation among public entities, non government organizations, user groups and other interested parties throughout the Gunnison basin to ensure that the basin's water resources are used in an economically and environmentally sound manner.

STATE GOVERNMENT ISSUES:

It is the policy of Gunnison County to participate in all forums affecting the provision of water to meet out-of-basin needs or which would interfere with the ability of the county's citizens to determine the manner and extent to which the county's water resources should be used to meet its own present and future goals.

It is further the policy of Gunnison County:

- To oppose new legislation and amendments to existing Colorado law which would in any way weaken the county's ability to regulate water resource development.

- To oppose any legislation which would in any way weaken county regulatory powers.

- To oppose any state water policies or planning which would place an undue burden on the Gunnison basin to provide water to meet out-of-basin needs.

- To encourage state rule making or legislation which will place the entire burden for mitigating water quality impacts resulting from the diversion or impoundment of water resources upon the developer of such resources.

- To encourage water quality classification of streams, lakes, and reservoirs by the state which will have the effect of recognizing and protecting high quality waters in the county while not imposing an unreasonable economic burden on existing and future water users.

FEDERAL GOVERNMENT ISSUES:

It is the policy of Gunnison County to monitor and, when appropriate, participate in all federal legislation, regulations, policies or plans which could affect the Gunnison basin's ability to provide water necessary to meet Gunnison County's present and future needs.

It is further the policy of Gunnison County:

- To encourage the United States to fulfill its previous commitments to provide stream access and other measures to mitigate for the construction of the Aspinall Unit of the Colorado River Storage Project.

- To support water language in proposed wilderness or wild and scenic river legislation which will provide environmental protection for the wilderness or wild and scenic river to be designated, which will require that the water right be administered and enforced in Colorado Water Court, and which will not impair present and future uses of water in the basin.

- To oppose legislation which would create a Federal water right but not require such right to be adjudicated in Colorado Water Court.

- To encourage the exercise of Federal reserved water rights in the Black Canyon of the Gunnison National Park in a manner that would not adversely impact the present and future uses of water in the basin including the recreational use of Blue Mesa Reservoir.

- To encourage water and hydroelectric power operations of the Aspinall unit of the CRSP which would not adversely impact the present and future uses of water in the basin, the recreational use of the Curecanti National Recreation Area, the purposes of the Black Canyon of the Gunnison National Park and the Gunnison Gorge.

- To oppose water sales and exchanges from Blue Mesa Reservoir which would adversely impact the present and future uses of water in the county, including the recreational use of the Curecanti National Recreational Area, the purposes of the Black Canyon of the Gunnison National Park, and the Gunnison Gorge.

- To support the recovery of endangered fish species in the Upper Colorado River Basin in a manner that protects historical users and does not place an unreasonable burden upon the present and future water users in the basin.

COUNTY PARTICIPATION IN OTHER WATER MANAGEMENT AND DEVELOPMENT ACTIVITIES:

It is the policy of Gunnison County to encourage and participate in the development of an in-basin water resource protection and development planning process that will ensure that the economic, social and environmental goals of the County are furthered.

Amended and Adopted this 18th day of October, 2005
by the Board of Commissioners of Gunnison County, Colorado

Jim Starr Chairperson	Hap Channell Vice-Chairperson	Paula Swenson Commissioner

PUBLIC INPUT ITEM 62

Ladies and Gentlemen,
As a member of the Colorado Trout Unlimited Organization and a concerned citizen of Colorado, it is important that I comment on the Colorado Water Plan and its ramifications and impacts on the well being of the people of Colorado and the future survival of its citizens. As I am sure you are aware, there was a recent compromise regarding the Fraser River and water entities on the Front Range that calls for maintaining habitat levels for fish and wildlife of the Fraser River and its watershed. Further draining of this watershed would cripple the habitat and should not be included in the Colorado Water Plan.

I own a home in the Front Range Metro Area as well as a home on the Western Slope in Grand Lake area. Therefore I feel I have a sane view of the impact of changes to the water flow of Western Slope streams and watershed that provide the lifeblood of development and population growth in Colorado. Being a citizen in Colorado for 40 years and owning property on the eastern Metro Area and Western Slope has given me a unique view of how the State has changed and progressed for generations. I moved to Colorado in 1970 to establish the Western Electric Manufacturing facility at 120th Avenue in Westminster and was able to experience the great impact water has on a City like Westminster and surrounding communities when contamination and water demand can increase. As Colorado population has grown, it is apparent that water usage has increased exponentially and development has also driven additional use.

At the same time that the Front Range has grown in population and development, so has population and development grown on the Western Slope. The growth on the Western Slope has been mainly focused on recreation and resource extraction. All of this growth and development has created greater demand for water usage. What is hurtful for the State is that this development and growth is mainly about big business and corporate income growth rather than preserving the beauty and quality of life in the State.

For instance, waterways are being privatized, watersheds are being diverted to corporate control and corporate power is capturing the public watershed for winter sports and tourism, other states such as Kansas on the East and California and Utah on the West are demanding a greater allotment of the annual runoff of the Rockies and the State of Colorado is at the same abdicating control of a public resource that is essential to the survival of its human population. The State of Colorado appears to be focused on development of the Oil and Gas Industry that is consuming and contaminating groundwater and will eventually exhaust the aquifers and deep underground water supplies. At the same time as the State is allowing the destruction of potable water throughout the state, the State is advertising for greater commercial and residential expansion while the water supply is being devastated by commercial development and extraction methods.

Rather than allow the Denver Water Board to control the vast resource for the State, there should be greater emphasis on allowing more control for the local communities and the existing citizens before additional development that compromises the safety and availability of water for existing citizens. When water becomes a threat to the operation of State watersheds, it is surely and clear action of the state to implement restrictions and increase delivery prices in the future. It doesn't take a PHD to see the future of water in Colorado when the State allows the exploitation of the resource by Corporate interests and moneyed interests that are getting sweetheart deals

to trap and control the watersheds for individual gain.

It is a sure bet that if the State Water Board continues to allow influence and political favoritism to dictate its decisions, the water situation in Colorado will be compromised and continue to be devastated exponentially.

If the main tributaries of the Colorado River flow mainly West, why isn't there a higher visibility for development of the Western Slope communities like Grand Junction, Fruita, Paonia, Rifle, Craig and other western communities rather than sucking the water supply to the Front Range. It appears that urban development is mainly focused on the Front Range rather than a balanced approach for all Colorado communities. That is a telling scenario of what moneyed interests can influence and drive growth of development and infrastructure across the state. When one travels throughout the Front Range, it is a nightmare to travel within the Metro Area and from Cheyenne, Wyo. to Colorado Springs, CO. Along with this nightmare is the over development of the Front Range that precipitates water use and occasional water shortage. If these issues are already apparent to citizens of the Front Range, it should influence the decisions of the Colorado Water Plans for the future. The use of the water resource is destined to continue to be an issue if growth is not restricted or at least planned for.

Additional runoff capture and reservoirs for additional storage should be a planned option for the future while at the same time limiting Front Range growth and concentrating more attention to growth in Western Colorado. Infrastructure from the Front Range to the western areas of Colorado with available water for development should at least be investigated as a part of future Colorado Water Board plans.

I trust I am not too obtuse in my response to the Colorado Water Plan but I want to emphasize the import of water to the future survival and growth for Colorado. My main focus as a citizen is to always protect the State Watersheds and recreation water resources of the State.

Gene Harlow
6820 West 68th Place
Arvada, Colorado 80003

PUBLIC INPUT ITEM 63

WATER QUALITY / QUANTITY COMMITTEE (QQ)

P.O. Box 2308 ● Silverthorne, Colorado 80498
970-468-0295 ● Fax 970-468-1208 ● email: qqwater@nwccog.org

September 15, 2015

VIA EMAIL: COwaterplan@state.co.us
Governor John Hickenlooper
Colorado Water Conservation Board
Diane Hoppe, Chair

Re: Northwest Colorado Council of Governments Water Quality/Quantity Committee (QQ) Comments on July 2015 Draft of the Colorado Water Plan

Dear Governor Hickenlooper, CWCB Chair Hoppe, and CWCB Board Members:

The following are the Northwest Colorado Council of Governments Water Quality/Quantity Committee ("QQ") comments on the July 2015 draft of Colorado's Water Plan (the "Plan").

As you know, QQ is a subcommittee of and the official water policy arm of the Northwest Colorado Council of Governments. The purpose of QQ is to enable its member jurisdictions to protect and enhance the headwaters of Colorado while facilitating the responsible use of water resources. Its membership comprises municipalities, counties, and water and sanitation districts in Grand, Summit, Pitkin, and Eagle Counties; Gunnison County; Park County; the Town of Crested Butte; and the City of Steamboat Springs. The Colorado River Water Conservation District is an associate member of QQ. QQ actively participates in the Colorado River Basin Implementation Plan and has been engaged in statewide water policy discussions for nearly 40 years.

Thank you for your hard work in compiling this document and attention to QQ's earlier comments on draft sections of the Plan. Our comments follow the order of the chapters in the plan, and conclude with a compilation of previous comments from QQ that have not yet been addressed.

COMMENTS

Chapter 3. Overview of Each Basin

Mainstem Colorado Basin.

The Plan does not adequately describe the challenges to the headwaters communities that have been caused by the significant transmountain diversions ("TMDs") from the headwaters of the Colorado River. Such a description would aid policy makers in

understanding why the headwaters region is so concerned about further water resource development. We recommend adding the following information:

> *More than 500,000 AF of water per year is diverted from Grand, Summit, Eagle and Pitkin Counties to the front-range. Grand and Summit Counties loose 60% of native flows to TMDs, which are 100% consumptive from the basins-of-origin.* [1] *The Colorado Basin Implementation Plan estimates that an additional 140,000 AF will be diverted through projects such as "the Moffat Collection System Project, Windy Gap Firming, Eagle River MOU, future Dillon Reservoir Diversions, firming in the Upper Roaring Fork and Fryingpan Rivers, and Colorado Springs Utilities expanded diversions from the upper Blue River."*[2]
>
> *These TMDs "result in adverse economic, environmental, and recreational impacts."*[3] *Impacts to water quality include "decreased dilution flows [for wastewater treatment]; decreased spring runoff 'flushing flows' which move accumulated sediments and impact fish spawning habitat . . . ; decreased aquatic life habitat; increased stream temperature and other water quality concerns associated with changes to channel morphology, and loss of high quality 'headwaters' with low pollutant concentrations."*[4]

Chapter 6. Water Supply Management for the Future

6.3.3 Land Use.

QQ appreciates sections in the Plan that emphasize the significant influence that land use planning and development has on water supply and demand, and how water supply planning implicates future development potential in areas from where the water is taken. QQ offers several comments to strengthen this section as follows.

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[1] Coley/Forrest Inc., "Water and Its Relationship to the Economies of the Headwaters Counties," Northwest Colorado Council of Governments, p. 7, December 2011, <http://nwccog.org/wp-content/uploads/2015/03/Response-to-Perceptions-REVISED-03.12.14.pdf>.
[2] SGM, Colorado Basin Implementation Plan, Executive Summary, p. 1, July 14, 2014.
[3] Colorado River Water Conservation District, Policy Statement on Transmountain Water Diversions, revised July 2011, available at < http://www.coloradoriverdistrict.org/conservepress/wp-content/uploads/2014/10/20110719-policies_TMDs.pdf>.
[4] Northwest Colorado Council of Governments, 208 Regional Water Quality Management Plan, C-27, 28, revised 2012, available at <http://nwccog.org/wp-content/uploads/2015/04/Upper-Colorado-Watershed-2012-208-Plan.pdf> and more generally at <http://nwccog.org/programs/watershed-services/>.

Actions.

1. The first action is to "[e]ncourage the use of local land use tools." QQ recommends that the Plan specify a role for CWCB and the Department of Local Affairs to develop additional training or other resources to assist local governments to plan for and adopt regulations that facilitate "water wise" land uses. The CWCB should also consider facilitating interactive cross-basin discussions about land use goals and how the goals are implemented through land use regulations. Cross–basin discussions would assist different regions of the state to share best practices, such as water-wise landscape requirements, while understanding how the planning and land use decisions in one part of the state affect the future of other parts of the state. Cross-basin discussions are essential to achieving the goals of the Plan. Although QQ comprises communities in the headwaters, cross-basin discussions should not be limited to transmountain issues. Discussions between basins in the eastern part of the state and the front range also are vitally important.

2. QQ suggests that the Plan encourage the CWCB to use the SB 15-008 training to share land use tools that protect river corridors, riparian areas, and water quality. The summary of QQ's Land Use/Water Conservation Workshop from May of 2014 provides some examples, including management plans for river and stream corridors, regulations that define development areas on properties, construction management regulations, revegetation requirements for disturbed areas, and setbacks from riparian areas. [5]A 2011 report from the University of Montana, *Bridging the Governance Gap: Strategies to Integrate Water and Land Use Planning,* offers additional examples of local regulations to protect and restore community water sources, including "zoning and subdivision rules aimed at protecting sensitive stream corridors, aquifer recharge initiatives, and clustered development to minimize impervious surfaces."[6] The Water Information Program also provides a substantial list of resources related to water and land use planning.[7]

3. QQ also recommends that the SB 15-008 trainings incorporate discussions of growth management tools, such as those that QQ identifies in its white paper, *Response to Perceptions Influencing the Colorado Water Plan.*[8] For example, local governments can:

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[5] Available at <http://nwccog.org/wp-content/uploads/2015/03/SUMMARY.NWCCOGQQ-LandUseWaterConsvnWorkshop-5-7-14.FINAL .pdf>.
[6] Sarah Bates, *Bridging the Governance Gap: Strategies to Integrate Water and Land Use Planning, Second Edition,* Center for Natural Resources and Environmental Policy, The University of Montana, 23 (2011), available at <http://cnrep.org/documents/montana_policy_reports/26910-Public-Policy-Water-Land-Use-Report-2011.pdf>.
[7] Available at <http://nwccog.org/wp-content/uploads/2015/03/Water-and-Land-Use-Planning-Reference-List-from-WIP-Website.pdf >.
[8] Pages 3-4, March 2014, available at <http://nwccog.org/wp-content/uploads/2015/03/Response-to-Perceptions-REVISED-03.12.14.pdf>.

- require phased development in order to ensure adequate services will be available, such as water and sewer services, and to ensure that existing services will not be unduly burdened by new users;[9]

- condition the issuance of a building permit on making or paying for necessary public improvements;[10]

- assess impact fees to lessen adverse impacts from development;[11]

  regulate the rate of population growth through developing growth management systems,[12] such as establishing a set number of development permits available on a competitive basis,[13] a set number of water and sewer taps distributed to proposed developments on an as-available basis,[14] or a set rate of growth that limits the number of development permits issued per year;[15] and

- identify areas most appropriate for growth in county and municipal master plans [16] and regulate the location of development.[17]

4. QQ supports the "incorporation of land-use practices into water conservation plans" described in Action Three. This action will help to facilitate discussions between water suppliers and land use decision-makers. Coordination should be enhanced where the water supply and land use are carried out by two different entities that serve the same population, or where the two functions are carried out by two departments of the same government but fail to coordinate with each other.

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[9] C.R.S. § 29-20-104 (1)(f).
[10] *Bethlehem Evangelical Lutheran Church v. City of Lakewood*, 626 P.2d 668, 671 (Colo. 1981).
[11] C.R.S. § 29-20-104 *et seq.*; C.R.S. § 30-28-133 (4)(a)(II); *Bd. of County Comm'rs of Douglas County, Colo. v. Bainbridge, Inc.*, 929 P.2d 691, 698-99 (Colo. 1996).
[12] *Construction Industry Associate of Sonoma v. City of Petaluma*, 522 F.2d 897 (9th Cir. 1975), *cert. denied*, 424 U.S. 934 (1976).
[13] "Chapter 6: Growth Management Quota System (GMQS) and Transferable Development Rights (TDR)," Pitkin County Land Use Code, July 2006, available at <http://www.aspenpitkin.com/Portals/0/docs/county/countycode/chapter%2006.pdf>; *Wilkinson v. Bd. of County Comm'rs of Pitkin County,* 872 P.2d 1269, 1276 (Colo.App. 1993).
[14] "Title 11 Chapter 3, Growth Management Program," Westminster Municipal Code, 1 Jan. 2011, available at <http://www.ci.westminster.co.us/CityGovernment/CityCode/TitleXI/3GrowthManagementProgram.aspx#s8>; *see also P-W Investments, Inc. v. City of Westminster*, 655 P.2d 1365 (Colo. 1982).
[15] "Chapter 18.70, Residential Growth Management," City of Golden Municipal Code, updated through October 2013 <http://sitetools.cityofgolden.net/Code.asp?CodeID=728>.
[16] C.R.S. § 31-23-206 for municipalities; C.R.S. § 30-28-106 for counties.
[17] C.R.S. § 29-20-104 (1)(e).

5. QQ recommends that local governments identify water use goals (for example a GPCD goal, or percent reduction in certain sectors) in their master plans. That would provide a framework for local governments to assess how to best achieve their water use goals, and allow local governments to measure development proposals against these goals whenever master plan compliance is a condition of land use approval.

6.6. Environmental and Recreational Projects and Methods.

Stream Management Plans.

1. QQ appreciates the detailed recognition of stream management planning in the Plan as well as the new source of funding made available in the 2015 CWCB Project Bill to help initiate these efforts. QQ also supports including the discussion of stream management plans that is incorporated into the Colorado River Basin Implementation Plan.[18]

The discussion between QQ and various stakeholders on stream management planning resulted in these proposed changes to the description of stream flow management plans:

> Well-developed stream management plans should be grounded in the complex interplay of *biology*, hydrology, channel morphology, and alternative water use and management strategies, and should ~~*include*~~ *explicitly consider* the flow ~~*dynamics*~~ *and other structural or management conditions* needed to support both recreational uses and ecosystem function. A stream management plan should: (1) assess existing *biological, hydrological and* geomorph~~*ic*~~*ological* conditions at a reach scale; (2) identify *optimal flow and other conditions needed* ~~*minimum flow needs for*~~ *to support* environmental and recreational water uses ~~*given appropriate geomorphic conditions*~~*; (3) incorporate environmental and recreational values and goals identified both locally and* in a basin roundtable's BIP; and (4) identify *and prioritize alternative management* actions to ~~*maintain or improve flow regimes*~~ *achieve measurable progress toward optimal flow and other conditions*. Such plans can provide a framework for decision-making and project implementation related to environmental and recreational water needs for basin roundtables, local stakeholder groups and decision-makers.
>
> The steps necessary to developing a stream management plan

[18] For example, see SGM, Colorado Basin Implementation Plan at 30, 46, and 47.

include: (1) identifying the plan's objectives; (2) identifying and prioritizing ecological and recreational values; (3) establishing ~~*flow and protection*~~ goals *for flow and other conditions in order to protect or improve important environmental and recreational attributes on* ~~*for*~~ streams and rivers within a given watershed; (4) collecting and synthesizing existing data describing flows for river ecosystems, boating, or other needs in the watershed; (5) assessing existing physical *and biological* conditions of stream reaches, including geomorph~~*ic*~~*ological* and riparian condition*s;* (6) ~~*developing quantitative flow targets to meet articulated goals*~~ *selecting quantitative measures that can be used to assess progress made toward goals;* ~~*(7) determining what new information is needed and the best methods for obtaining that information;*~~ (8) quantifying specific numeric flow recommendations (or ranges of flow) *or other conditions* to ~~*support*~~ protect or improve environmental and recreational values; (9) identifying temporal, geographical, legal, or administrative constraints and opportunities that may limit or assist the ability to meet environmental and recreational goals; and (10) *implementing a stakeholder-driven process for* identifying and prioritizing environmental and recreational projects. Stream management plans should provide data-driven ~~*flow*~~ recommendations that have a high probability of protecting *or improving* environmental and recreational values on streams and rivers.

Chapter 9. Alignment of State Resources and Policies

9.4 Framework on More Efficient Water Project Permitting Processes.

From our experience permitting water supply projects, early stakeholder coordination is the best way to make the permit process more efficient. The CWCB and other state agencies are better suited to the neutral role of facilitating discussions among competing interests rather than advocating for or against projects in permitting, especially when the state may have a regulatory responsibility.

QQ offers these general recommendations for this section, followed by more specific comments by subsection.

1. QQ recommends that Section 9.4 focus primarily on "frontloading" permitting processes through coordinated early stakeholder engagement and discussions such that significant issues, local concerns, information and data requirements, level of detail,

agreement on mitigation concepts, etc. are addressed upfront before a project gets mired in NEPA. The state could provide a valuable role in facilitating this upfront coordination of permit requirements among local, state, and federal permitting entities.

With early, upfront conversations about site specific conditions in the actual areas affected by proposed projects, the NEPA process would be better and more precise because it would not examine alternatives that never would have been possible in the first place given a realistic understanding of local conditions.

2. QQ remains extremely concerned that the Plan continues to focus on a framework for state endorsement. As currently written, the draft Plan states:

> [T]he State could provide endorsement of the project before the Final EIS. As described above, each state agency would provide their recommendations to the Governor's office that could then communicate to the appropriate federal agency that the State supports or does not support a given project. . . . Such state endorsement would allow the State to encourage completion of the EIS and ROD. (p. 372)

QQ does not support the idea of the state communicating its support or non support of a project to federal regulators, or encouraging completion of an EIS or ROD, especially before permitting and mitigation for project impacts are complete. The state's regulatory role in the 401 Certification should not be compromised in any way, nor should it be an advocate for any project unless all stakeholders request that it assume such a role.

3. QQ remains concerned that the proposed framework for state endorsement adds additional burdens to the permitting process. One look at Figure 9.4-4 reveals how this effort complicates the permitting process. The focus on bumping up 401 Certification is unnecessary if the joint coordination mentioned above occurs. Often, the 401 Certification is seen as burdensome because applicants have to provide additional data and analysis. They may have gathered water quality information for the federal NEPA process without determining what data is necessary for the WQCD analysis, or they may have used a methodology not adequate for purposes of the 401 Certification. Through better coordination, the assessment of water quality for NEPA purposes could be enhanced to meet the regulatory requirements of the WQCD 401 program. That alone would streamline the permitting more effectively than the convoluted process laid out in Figure 9.4-4.

1041 Local Permits.

This section should refer generally to local government authorizations to reflect that local governments have authority to permit water projects in addition to the authority granted by the Areas and Activities of State Interest Act (1041). The Plan should recommend that local governments be included with state and federal agencies in upfront discussions of

permit application needs and mitigation approaches, and note that local approval is required. The Plan could enhance statewide understanding of the local permit process by summarizing the environmental and socio-economic impacts that local permits seek to minimize or avoid.

This section also states:

> Local governments may not pass regulations that are completely prohibitive of the building of municipal water facilities and expansion of existing projects. (362-3)

While it is true that local governments cannot prohibit water projects, this quote overstates and takes out of context the holding of *City and County of Denver by and through Board of Water Comm'rs v. Board of County Comm'rs of Grand County*, 782 P.2d 753, 762 (Colo. 1989):

> The Land Use Act gives Grand County and Eagle County the power to regulate, but not to prohibit, Denver's operation of extraterritorial waterworks projects. See *Town of Glendale v. City and County of Denver,* 137 Colo. 188, 194-95, 322 P.2d 1053, 1057 (1958); cf. *City of Thornton v. Farmer's Reservoir and Irrigation Co.,* 194 Colo. 526, 533, 575 P.2d 382, 388 (1978) (Water Rights Condemnation Act violated article XX because it gave municipal commissions power to prevent acts of condemnation by home rule cities).

First, the holding in that case was limited to projects sponsored by home rule cities, but the statement in the Plan incorrectly applies the holding to all project applicants. Second, this statement could be read to ignore the power of a local permit authority to deny a 1041 permit for a project that cannot satisfy requirements that are legally imposed under H.B. 1041 and the implementing regulations. The court expressly *rejected* the cities' argument that the denial of a permit application was the same as a prohibition. The Act specifically provides that the permit authority *shall deny* a 1041 permit for a proposed activity that does not comply with 1041 guidelines and regulations. C.R.S. § 24-65.1-501 (4). Such denial does not abrogate home rule authority. *City of Colorado Springs v. Board of County Comm'rs of the County of Eagle*, 895 P.2d 1105, 1116-1117 (Colo. App. 1994) (*cert denied* June 5, 1995).

Potential Conceptual Framework for State of Colorado Support of a Project.

QQ recommends eliminating the entire "framework for state endorsement." This proposed framework goes well beyond the Executive Order, which directed the CWCB to "streamline the State role in the approval and regulatory processes regarding water projects." Additionally, QQ remains unclear what state "endorsement" for a project will mean.

However, if this framework remains in the Plan, QQ offers the following comments and revisions.

Initial Studies and Stakeholder Involvement.

It is unclear from this language whether the proposed framework process would only apply to projects that seek technical or financial support, or whether the proposed framework would be required for all projects.

Project Meets Factors.

The proposed factors for a water project to receive a state endorsement (identified on pp. 368-69 of the July 2015 draft Plan) continue to raise concerns for QQ members.

1. If the CWCB uses a set of factors to assess a water project, QQ supports the factors being used to determine where the state might "commit to a resource-intensive approach at the beginning of the permitting process . . . include[ing] coordination with local governments and stakeholders as well as cooperating agencies." (p. 369) QQ recommends the CWCB consider adding more information on how the factors would play into such a determination.

2. QQ recommends revising the factor that evaluates whether a project "[i]nvolves local government consultation" to read:

> *The project has been approved by the affected counties, conservancy districts, and conservation districts in the area from which water would be diverted.*

The need for local approval is supported by QQ and also by thirty local governments and the Colorado Basin Roundtable in the West Slope Principles for the Colorado Water Plan.[19] Moreover, agreements that led to the Moffat Expansion Project and the Windy Gap Firming Project all rest on the requirement that local governments approve a proposed water project. Finally, the Colorado River Cooperative Agreement would never have been forged without a similar provision.

3. These factors introduce new potential for intrastate conflict. For example, one factor is whether the proposed project is identified in a Basin Implementation Plan ("BIP"). This raises the question of which BIP controls, especially where an applicant wants to develop a water project supported in the BIP for the area to be served, but that is opposed in the BIP for the area from which the water will be taken. Another factor is whether a project meets a SWSI-defined need. QQ recommends clarifying that a SWSI-defined need is typically limited

[19] These Principles are available at http://nwccog.org/docs/qq/waterplan/Principles%20w%20updated%20endorsement%20100614.pdf.

to consumptive uses and that it may be in conflict with nonconsumptive needs identified in BIPs. QQ recommends adding an additional factor to address these conflicts:

> *Addresses and mitigates negative impacts to defined needs in any basin's BIP, including consumptive and recreational /environmental needs.*

Preliminary Technical Review for State Processes.

This section of the Plan has been revised from earlier versions to no longer suggest an early 401 certification before the Final EIS. However, the draft still advocates for the WQCD to issue a "contingent" 401 Certification after the Draft EIS. This section states:

> CDPHE would evaluate whether the preferred alternative adequately addresses water quality impacts, and includes sufficient mitigation and enhancements for water quality . . . each agency would then provide the Governor's office their recommendations on the project.

QQ does not support the state issuing a "contingent" 401 Certification or any type of endorsement before a Final EIS is issued, committing to certification based on a Draft EIS that is, almost by definition, incomplete. QQ has no concern with a contingent certification following the Final EIS.

The following is a list of some of QQ's concerns with an early "contingent" 401 Certification:

1. The 401 Certification, though implemented by the state, is a requirement of federal law. The state is charged with making a determination that the project will comply with state water quality requirements. The determination would be legally vulnerable if it followed on the heels of a pre-decisional opinion.

2. Draft EISs often do not contain mitigation plans since those regularly are delayed until the Final EIS is released. A contingent 401 Certification may include superfluous or contradictory requirements compared to the final mitigation proposal. For example, neither the Moffat System Expansion Project Draft EIS nor the Windy Gap Firming Project Draft EIS contained complete mitigation plans. More complete mitigation proposals were developed in consultation with local interests after the Draft EIS was released, many of which affect water quality.

3. Most projects and the analysis of their impacts change between the Draft and Final EIS in order to address comments received from agencies and the public.

4. Local governments have their own permitting processes that prohibit significant degradation of water quality. An early 401 Certification would not be able to take into

account water quality mitigation imposed by the local government that might obviate the need for the WQCD to impose the same conditions.

5. Issuing a "contingent" 401 or endorsement of a project based only on the Draft EIS would make it harder for the WQCD to change or deny certification based on the more complete FEIS and based on the WQCD's own process, including anti degradation review.

6. There is no evidence that a contingent 401 Certification would streamline the permit process.

Chapter 10. Critical Action Plan

In general, this section of the Plan offers important actions that the General Assembly and state agencies can reference in order to protect the values identified at the beginning of this chapter.

The first value mentioned is "a productive economy that supports vibrant and sustainable cities, viable and productive agriculture, and a robust skiing, recreation and tourism industry." The paragraph that explains this value does not mention recreation and tourism economy again at all. For example, the paragraph says:

> . . . water planning for the future must reflect careful deliberation and balancing of the many municipal, industrial, and agricultural uses throughout the state.

QQ recommends revising this sentence to read:

> . . . water planning for the future must reflect careful deliberation and balancing of the many municipal, industrial, ~~and~~ agricultural*, recreational, tourism, and environmental* uses throughout the state.

Please add that in many areas of the state, including QQ region, recreation and tourism drive the economy and contribute substantially to the recreation and tourism economy in metro areas as well. A reference to the 2011 Coley/Forest report would be useful.[20]

10.3. Strategic Goals and Actions.

I. Develop a Multi-purpose Funding Plan.
a. Align Existing Funding.

[20] *See* fn 1.

Governor John Hickenlooper
Colorado Water Conservation Board
Re: Northwest Colorado Council of Governments Water Quality/Quantity Committee (QQ) Comments on July 2015 Draft of the Colorado Water Plan
September 15, 2015

1. Action Five. Because the demand for stream management plans (which Chapter 6 refers to as stream flow management plans) and watershed plans may be greater than $1 million, QQ recommends this action be revised as follows:

> 5. Continue to provide $1 million *or more* annually to support stream *flow* management and watershed plans.

2. Action Six. This action states:

> 6. Investigate the potential for the CWCB to become a project beneficiary through an arranged partnership for projects that are central to fulfilling the goals of Colorado's Water Plan.

QQ supports multi-purpose projects as one way to maximize the efficient use of the state's water resources and minimize impacts. However, it is unclear what the CWCB's role as a project beneficiary would look like. Chapter 9 offers this same suggested action but does not discuss what the CWCB's role would entail. QQ recommends further explaining this concept both in Action Six and in Chapter 9.

II. Promote Multi-purpose Initiatives.
a. Improve Permitting Processes.

1. It is not necessary to "provide an opportunity for state endorsement" if permitting is more efficient and effective.

2. Action One is to "conduct a series of lean events with permitting agencies and stakeholders . . ." What is a "lean event"?

3. Action Six. This action should be rewritten to be consistent with Chapter 9. Chapter 9 states that the CWCB developed the conceptual framework for state endorsement "to encourage more discussion among state agencies and stakeholders." Action Six, however, connotes that establishing a process for state endorsement is a foregone conclusion.

QQ recommends revising this action to be consistent with Chapter 9 and to reflect that the proposal to develop a pathway to state endorsement of a project is not to be a foregone conclusion:

> 6. ~~*Determine how Colorado will endorse a project after preliminary or contingent 401 certifications and fish wildlife mitigation plans are completed.*~~ *Facilitate discussion among state agencies and stakeholders to determine if Colorado might*

> *endorse a project, and at what stage in the permitting process such endorsement might occur.*

II. Promote Multi-purpose Initiatives.
c. Facilitate Alternative Transfer Methods.

1. Action One states:

> 1. Support the maximum use of water rights by exploring opportunities to create more flexibility for various types of water transfers.

QQ supports such efforts to maximize the use of water rights only if such use of water rights includes recreational, environmental, and other "nonconsumptive" uses.

2. QQ recommends an action item that explores opportunities to reduce transactional costs for alternative transfer methods.

III. Promote Vibrant Sustainable Cities.
c. Integrate Land Use and Water Planning.

QQ suggests a fourth action item of legislating that community master plans must include water use goals.

Please contact us with any further questions.

Sincerely,

Northwest Colorado Council of Governments Water Quality/Water Quantity Committee

cc: James Eklund
Rebecca Mitchell
Jacob Bornstein
Kate McIntire

Governor John Hickenlooper
Colorado Water Conservation Board
Re: Northwest Colorado Council of Governments Water Quality/Quantity Committee (QQ) Comments on July 2015 Draft of the Colorado Water Plan
September 15, 2015

UNADDRESSED QQ COMMENTS

The following comments from QQ on the December 2014 draft of the Plan remain unaddressed. QQ asks that the CWCB address these comments in this last round of revisions to the Plan.

Chapter 5. Water Demands

Overview of Environmental and Recreational Needs.

Generally, this section does an excellent job of describing the measure of environmental and recreational needs around the state. We would like to reiterate one comment QQ voiced about an earlier draft of this section. On page 81, the Plan states:

> The ability to decree water using instream flows and recreational in-channel diversions provides Colorado with important, effective tools for meeting environmental and recreational needs and for supporting state and federal values.

While QQ agrees that these are important and often effective tools for meeting environmental and recreational needs, they are not always effective. In many ways, these tools provide the minimum for meeting environmental and recreational needs, and do not take into account important ecological functions such as flushing flows, bank flows, water quality needs, and many other factors in overall stream health. Also, many instream and RICD flows regularly go unmet, especially in drier years, as they hold more junior water rights in most basins.

QQ recommends adding an additional sentence:

> *These tools can be supplemented in the future to be more effective; they are best implemented within the context of stream management plans that analyze the environmental and recreational needs of individual stream reaches.*

Chapter 6. Water Supply Management for the Future

6.2 Meeting Colorado's Water Gaps.

Page 109 discusses BIP treatment of water quality management needs, saying:

> Although water quality is not an issue traditionally studied by the basin roundtables, every BIP addresses water quality. Section 7.3 summarizes the BIP water quality efforts.

However, basin roundtables regularly approve grants for projects that improve water quality, either through a multi-purpose project or as a stand-alone benefit. We recommend changing this wording to reflect that basin roundtables do regularly address water quality:

> ~~*Although water quality is not an issue traditionally studied by the basin roundtables, e*~~*E*very BIP addresses water quality. Section 7.3 summarizes the BIP water quality efforts.

Meeting Colorado's Environmental and Recreational Needs.

This section focuses on the number of stream miles with existing protections. The BIPs still identify needed projects on these stretches, indicating that these protections aren't necessarily adequate. This section should at least acknowledge that even stream sections with some protection may need further protection.

Table 6.2-4, "Summary of how each basin meets its E & R gaps," is confusing, especially when compared to information in the below text describing each BIP. The Table lists the "number of new projects with stream mile information" for each BIP. It's unclear why this particular metric is important in the table, especially since those numbers are very small when compared to the actual number of E & R projects identified in each BIP. For example, Table 6.2-4 only lists three new projects in the Colorado BIP "with stream mile information," but the text of this section points out that the Colorado BIP identifies 59 E & R projects. The introduction to the table would benefit from a separate column for total number of E & R projects identified in BIPs.

We also encourage the CWCB to highlight ongoing innovative work to address environmental and recreational issues in tandem with agricultural issues. The Colorado Ag Water Alliance has done considerable work around this issue. In addition, the Plan should highlight existing innovative projects, such as the recent Colorado Water Trust deal to achieve agreement amongst farmers and ranchers to leave more water in the heavily diverted Little Cimarron River.[21]

6.3.1 Municipal Conservation.

The plan should include the Eagle River Water and Sanitation District ("ERWSD") in the bulleted list of water conservation examples across the state on pages 145-146 to provide

[21] For more information on this project and its potential applicability around the state, see http://www.postindependent.com/news/16089562-113/innovative-water-use-plan-could-help-crystal.

more examples from different regions of Colorado. We recommend including the below paragraph, provided to QQ from ERWSD, as an additional bullet point:

> ***Eagle River Water and Sanitation District/Upper Eagle Regional Water Authority.*** *These water providers operate under a CWCB-approved water conservation plan whose goal is to preserve in-basin water resources for stream flows, recreation and future consumptive and non-consumptive needs, while still meeting their municipal water supply obligations. Tiered rates, first implemented in response to the drought of 2002, permanent year-round water use regulations and educational outreach to customers have reduced water sales per single family equivalent by 24 percent. Current efforts are focused on additional improvements to outdoor water use efficiency, which consumes resources that could serve future needs, reduces local stream flows and results in water quality impacts from landscaping runoff. These entities are developing water budgeting and working with land use authorities to coordinate water use and water quality approval criteria for new development and landscaping guidelines that support water use efficiency objectives.*

6.3.3 Land Use.

This is an important section of the Plan, but many people statewide may not understand why and how this connection is so important. The introductory language says on page 165, "The manner by which Colorado develops into the future will have a strong influence on Colorado's future water supply gap and vice versa," but provides no information on how that would occur.

This section would benefit from additional information on how local land use planning affects water demands and how water sensitive land use planning can reduce water demands, and thus the Gap, in the future.

Under the action item Strengthen Partnerships, we recommend including water conservation districts and water conservancy districts to the first listed partnership, Local Municipalities/Local Water Providers

Chapter 8. Interbasin Projects and Agreements

The introduction to this section says that the reason for creating intrastate agreements is to "align key parties' interests and understanding so that Colorado has a united voice when

dealing with interstate and federal negotiations and litigation about water exiting the state." Many of the example agreements listed do not pertain to water leaving the state or interstate agreements. Some of them are explicitly to provide water supply for a particular water provider while taking into account some of the concerns of the areas from which the water comes. These agreements are multi-purpose and have significant benefit to many regions of the state. This section should be clear that the focus of the examples listed was not to better situate the state in interstate negotiations, but to benefit particular stream sections, address stream- or segment-specific problems, and to benefit water users.

The summary box at the beginning of this chapter should be revised for additional clarity. Bullet "C" states that this chapter will "[u]se the Draft Conceptual Agreement as an integrated package of concepts" to address environmental resiliency, higher conservation commitments, and facilitate a possible transmountain diversion project in the future. QQ members are concerned about any plans to facilitate a transmountain diversion project and would recommend a more general reference for future water projects, whether they are in-basin or cross-basin.

Finally, we recommend that this chapter add additional language explaining how the conceptual agreement would be used and the roles of various stakeholders in any sort of conceptual agreement.

Existing Stakeholder Agreements and Projects.

Windy Gap Firming Project. The discussion states:

> This water will be supplied via the Colorado-Big Thompson Project, so the BOR must approve a contract allowing use of federal facilities.

This sentence should be updated to refer to the Amendatory Contract that was finalized last year. QQ would be happy to provide this to the staff.

The description also does not explain that the Colorado-Big Thompson is a federal transmountain diversion project. QQ recommends the following changes to explain this to readers:

> *Chimney Hollow Reservoir would allow the Subdistrict to divert more water from the Colorado River because the Subdistrict can use it to make more room in Granby Reservoir.* This water will be supplied via the federal Colorado-Big Thompson Project, so the *Bureau of Reclamation* must approve a contract allowing use of federal facilities.

The Plan states "[Windy Gap Firming Project] is operated by Northern Water's Municipal Subdistrict."

Please revise the statement to read as follows:

> It is operated by Northern Water's Municipal Subdistrict*, and as a result Northern has unique obligations to mitigate impacts in the Colorado River basin imposed by statute under the Water Conservancy Act.*[22]

Please revise paragraph 3 as follows to be more accurate:

> . . . As part of the 1041 permit approved by Grand County, the Subdistrict has entered into agreements with *~~local governments and environmental nonprofits~~ the County, Middle Park Conservancy District, Northwest Colorado Council of Governments, and the Colorado River Water Conservation District* that provide ecological enhancements *to the Colorado River to offset some of the historical and projected impacts caused by diversions.* The Windy Gap Bypass Funding Agreement provides $2 million to construct a bypass around the reservoir . . .

Chapter 9. Alignment of State Resources and Policies

9.1 Protecting Colorado's Compacts and Upholding Colorado Water Law.

This section says on page 332 that the state will "continue to assure the proper balance between the State and Federal roles in Colorado's water law and water management system." While this statement alone is an acceptable goal for the Plan, the information that follows is concerning for several reasons. First, this paragraph lists several federal policies that have "called into question the balance in State and Federal roles," but does not explain why or how these policies affect the state or water law and management. The Forest Service has withdrawn its directive on groundwater management. Resource management plans are not in any way a "new policy" and should not be included as such.

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[22] C.R.S. 37-45-118 (b)(II):

> Any works or facilities planned and designed for the exportation of water from the natural basin of the Colorado river and its tributaries in Colorado, by any district created under this article, shall be subject to the provisions of the Colorado river compact and the "Boulder Canyon Project Act". Any such works or facilities shall be designed, constructed, and operated in such manner that the present appropriations of water and, in addition thereto, prospective uses of water for irrigation and other beneficial consumptive use purposes, including consumptive uses for domestic, mining, and industrial purposes, within the natural basin of the Colorado river in the state of Colorado from which water is exported will not be impaired nor increased in cost at the expense of the water users within the natural basin. The facilities and other means for the accomplishment of said purpose shall be incorporated in and made a part of any project plans for the exportation of water from said natural basin in Colorado.

Second, this paragraph makes a concerning statement about bypass flows. The paragraph states:

> . . . [T]he State has also had to grapple with the federal assertions of authority to mandate bypass flows as a resource management tool. To the extent they interfere with and potentially undermine water rights as decreed and administered within the State, Colorado maintains that bypass flows should not be a preferred method for managing water on federal lands. Rather, before federal agencies seek to impose bypass flows as a resource management tool, they should work with the State to identify how such use will comport with the water rights administration under Colorado law.

In the QQ region, bypass flows that require water to be released to save a stream from dry-up have been and continue to be a central method to protect watershed health as mitigation for transmountain diversions on federal lands. The federal government often imposes bypass flows as part of their special use permitting of a water project on federal land as part of the agency's mandate to protect the health of the public lands. Courts have upheld bypass flows as part of the Forest Service's special use permitting process. *See Trout Unlimited vs. U.S. Dept. of Agriculture*, 320 F. Supp. 2d 1090 (D. Colo. 2004), *appeal dismissed,* 441 F 3d 1214 (10th Cir. 2006).

The next action is that the state will "continue to work within Colorado's local structure." QQ appreciates this point and would like to stress that because of the significant role local governments play in permitting water projects, this statement is of the upmost importance to this chapter. This paragraph points out that local governments have considerable authority "explicitly conferred to them by state law." We recommend clarifying that local governments, especially home rule authorities, also have considerable *implied powers* under their police power to protect public health, safety and welfare.

9.2 Economics and Funding.

QQ does not support the use of state funds for a TMD except through existing programs available through the CWCB or the Water Resources and Power Authority. Page 341 of this section identifies the potential need for additional state funding to:

> . . . support innovative water projects, such as multi-use, alternative agricultural transfers, or a new transmountain diversion with a sufficient back-up supply on the eastern slope, combined with significant environmental and recreational enhancements that meet the criteria of the [IBCC] . . .

Because the idea of state funding for a new TMD does not have consensus throughout the state, the Plan should not discuss the use of state funds for such a project as if it were a well-accepted proposal.

PUBLIC INPUT ITEM 64

PITKIN COUNTY

September 15, 2015

530 E. Main Street, 3rd Floor
Aspen, Colorado 81611
phone (970) 920-5200
fax (970) 920-5198

Via e-mail: cowaterplan@state.co.us
James Eklund, Director
Colorado Water Conservation Board
1313 Sherman St., Room 718
Denver, CO 80203

RE: Pitkin County's Comments on the Second Draft of Colorado's Water Plan

Dear Mr. Eklund and CWCB Board:

The Pitkin County Board of County Commissioners expresses its gratitude to the Colorado Water Conservation Board and the Interbasin Compact Committee for the work that has been undertaken to produce the second draft of Colorado's Water Plan (the "Water Plan" or "CWP"). In particular, Pitkin County thanks the CWCB for its consideration of public comments on the second draft of the Water Plan.

Pitkin County has deep reservations about the reallocation of our scarce water resources. These reservations are based on the recognition of an undeniable truth, that the Colorado River watershed is over appropriated and overburdened as we, all Coloradans, head into the culmination of this first comprehensive statewide water plan.

Pitkin County wholeheartedly endorses the IBCC's 7 Point Agreement as expressed in Chapter 8 of the second draft. However, Pitkin County strongly believes that the seven points, or principles, need to be elaborated further in order to eliminate any ambiguity or equivocation and expanded in scope to apply equally to the various IPP's that involve trans-basin diversions. The IPP's are the result of simple community canvassing to obtain information as to any potential plans or processes that are being contemplated around the state. The IPP's have not been vetted and vary widely in size, impact and feasibility. Further, Pitkin County believes that these seven principles must be given the force of law through legislative enactment and must be recommended as such to the Legislature by the CWCB. Without enhancement and independent legislative enactment, the seven principles will be subject to erosion as we have already seen in the recent discussions concerning conservation goals.

The acceptance of the final Water Plan should not be the precipitating event in a race to see who can establish the biggest entitlements and take the last drop of available or theoretically available water out of the Colorado watershed leaving the West Slope to be whipsawed between Front Range dependence and Colorado compact obligations. This potential future would surely see economic stagnation, loss of economic vitality and a decline in tourism on the West Slope

accompanied by restrictions on our growth and development, the sacrifice of our riparian environments and our ability to prosper.

It does not appear to Pitkin County that there is any source of funding outside of the state for the development of a new trans-mountain diversion project. Therefore, to construct such a project in-state resources and potential federal loans must be utilized. As a consequence, any project must ultimately pay for itself and do so by delivering consumable water to ultimate users. Therefore, such a project must have an ability to rely upon a known amount of water to be delivered to the Front Range. It is difficult if not impossible to imagine such a project being completed in the current economic climate without the ability to realize a firm yield. Further, such a TMD project or the non-discriminatory pursuit of IPP's will invite the sacrifice of West Slope agriculture and municipal condemnation of West Slope water rights to keep the pipes filled. Without enhancement and independent legislative enactment, the first principle of the IBCC might be abandoned as an exigency of some future time.

Principle three, concerning triggers upon which to base the operation of a new diversion project, must also be elaborated upon particularly. These triggers must include a requirement that the operation of any new TMD shall not exacerbate to any degree the risk of compact curtailment. These triggers must include an analysis of <u>all</u> Colorado River system reservoirs such that sufficient stored water is demonstrated to exist within the state to meet West Slope demands, both consumptive and non-consumptive, endangered species recovery programs and compact compliance.

Independent of a new trans-mountain diversion project or the development of the various IPPs, the Water Plan should also include, as a separate chapter, the requirement for sending and receiving basins to work cooperatively toward the development of reservoir management protocols. Such protocols should provide for the delivery of contract water, the maintenance of fisheries and riparian environments, and the avoidance of any detrimental impacts associated with any required maintenance or system repair such as was recently experienced at Grizzly Reservoir.

Future West Slope needs as contemplated in principle five must be quantified. This quantification might be based upon a presumed and stated growth rate for the West Slope but must guarantee that water be available for West Slope consumptive and non-consumptive needs. Only with acceptance of a defined growth rate for the West Slope will its various economies be protected. Mitigation should not be left to a system of economic compensation but to an allocation of the water resource which will be crucial to the West Slope's long-term future.

Colorado law has long recognized the importance of the empowerment of local jurisdictions to review the impacts of water development projects and to require appropriate mitigation of negative impacts. The Water Plan must particularly recognize the importance and necessity of local jurisdiction review of water development projects through 1041 authority and other applicable local land use and development regulatory authority.

At this point in time, the effects of climate change are uncertain. However, there is widespread agreement that climate change will bring Colorado a degree of increased drought periods and

lessening snowpack. The Water Plan must make clear that the development of any new water projects that transport water away from the West Slope must bear the full risk of whatever effect is occasioned upon us through climate change.

To be frank, the only logical path forward for Colorado is to embrace statewide, the goal of high conservation levels or strategies. It should dominate the discussion and inform the Water Plan. Quite simply, it is the most responsible, cost effective and least damaging and quickest method to increase supply.

Pitkin County urges the CWCB to heed these comments and those from other West Slope constituents to assist in the production of a document that is as meaningful and relevant as possible.

BOARD OF COUNTY COMMISSIONERS OF PITKIN COUNTY

Sincerely,

Steven F. Child

Steven F. Child
Chair

PUBLIC INPUT ITEM 66

DOUGLAS COUNTY
COLORADO

Office of the County Commissioners
www.douglas.co.us

September 15, 2015

James Eklund
Director, CWCB
1313 Sherman Street, Room 721
Denver, CO 80203

Dear Mr. Eklund,

The Douglas County Board of County Commissioners wants to thank you and your staff for addressing some of the comments we sent you on June 17, 2014 related to the First Draft of the Colorado Water Plan, specifically what was in the Section: "Creating a More Efficient Permitting Process". While the revised language in the Second Draft is improved, we believe that further work is needed to strengthen the aforementioned Section (formally 5.10 and now 9.4).

We have concern that the revised Section has the potential to add additional barriers to the permitting process. The Section should state upfront that the purpose is to decrease the red tape and overall timeframes involved in projects that require state and federal permitting, and that nothing within the CWP should seek to add additional requirements and standards that could further delay this already overly burdensome process.

Additionally, language in the Second Draft related to water projects achieving a state-supported designation is merely suggested rather than committed. It is important that the state support water projects and we therefore recommend the Second Draft provide a streamlined and easy to understand roadmap on how projects will achieve state support.

We are also concerned that those projects requiring state approval often times require additional studies above and beyond that already underway or completed through the National Environmental Policy Act (NEPA) process. This additional workload is not only costly but significantly delays the project(s). Please add language that ensures that state agencies are coordinating with federal agencies through the NEPA process so additional studies would not be required to meet state requirements.

The content within the "Actions" heading is vastly improved in this Second Draft, specifically the discussion of "lean events". We would like to see the state include specific goals for these events including dates, locations and timeframes.

Lastly, we believe that changes to the state regulatory framework are necessary for the purpose of providing increased efficiency to the permitting process. Regulatory changes should first focus on requiring state agency input into any NEPA action related to water, and where state-supported, should start early and continue advocacy throughout the process.

We thank you for the opportunity to comment on the Second Draft of the CWP.

Sincerely,

BOARD OF COUNTY COMMISSIONERS

David A. Weaver | Roger A. Partridge | Jill E. Repella

Cc: Tim Murrell, Water Resources Planner – Douglas County
Eric Hecox, Executive Director - South Metro Water Supply Authority

David A. Weaver
Commissioner District I

Roger A. Partridge
Commissioner District II

Jill E. Repella
Commissioner District III

100 Third Street • Castle Rock, Colorado 80104 • 303.660.7401 • Fax 303.484.4344

PUBLIC INPUT ITEM 69

Whose Water Right is it?

In addressing Water, it must first be recognized as someone's *Vested Property Right.
Legal ways Water is known to be Property: It is bought, sold, conveyed and stolen, and is taxable by state.
Therefore, the first question that must be answered before proceeding in any public or private matter as pertains to Water, is: "Whose Water Right is included?"
Water Rights included in a Water discussion should be identified and Owners present.

Questions

1. Whose Water Rights are being discussed?
2. What is Water Right's first date of Appropriation?
3. What is Water Right's Allotment Quantity?
4. Who wants the Water Rights?
5. Who will benefit from Water Rights?
6. Who will be harmed by Water Rights?
7. Who will pay for Water Rights? Private party, state, city, ditch, federal etc.?
8. What is the "fair market value" of Water Rights?
9. What is the acre feet difference between Water Right's Consumptive Use and Allotment Quantity?
10. What is the fair market value of the difference between Consumptive Use and Allotment Quantity?
11. Has Owner retained and put to beneficial use said acre feet difference between Consumptive Use and Allotment Quantity?
12. Is Sale of Water Rights a matter of legislation, or is it a private sector matter between Seller and Buyer?
13. Are there Members of State's General Assembly who have a personal or private interest in this measure? If yes, member has a responsibility to disclose the fact and not vote. Article V Constitution of the State of Colorado Sec.'s 40 to 43. Check your state's constitution.
14. Have the vested rights of Water Rights ever been impaired? If yes, has Owner been justly compensated?
15. Has Owner been denied use of his or her Vested Water Rights? If yes, by whom? Has Owner been justly compensated?

Some state's governors have agreements (Not compacts. Look it up.), with federal and other states that commit Water Rights (assets) and money (indebt a state) to "recovery programs" for species. In many states, this violates state's constitution and the Commerce Clause.
Answers to the following questions will show whether or not your state's involved in such.

1. Has your governor signed an agreement with federal and other states that commit Water Rights and money to a "recovery program" for a species?
2. Are Water Rights being diverted/used for any species program, conservation easement etc.? If yes, has Owner given written permission? To whom? How many acre feet is/was Owner compensated?

3. Are Water Rights on federal land being diverted/used for use by any federal agency? If yes, has Owner given written permission? To whom? How many acre feet is/was Owner compensated…and by whom?

4. Has a species recovery program caused injury (loss of income, devaluation of Property etc.) to agriculture? If yes, have injured parties been justly compensated?

5. Because recovery species programs are "agreements," said agreements are likely to have a withdrawal clause that allows governors to withdraw without penalties, litigation etc. You have the right to demand your governor withdraw your state from any such agreement.

a. ***ESA** has prohibitions of the killing (taking) of species <u>except when</u>:
b. "… (They) become seriously *<u>injurious to the agricultural</u> or other interests in any particular community…" Protection of Migratory Birds, Article VII, 1916
c. "… (They) become <u>injurious to agriculture</u> and constitute plagues…" Protection of Migratory Birds and Game Mammals, Article II E, 1937
d. "…For the purpose of protecting persons and property…" Protection of Birds and Their Environment, Article III (b), 1974;
e. *Injurious includes "significant economic impact, violation of customs and cultures of community."

<u>KNOW YOUR STATE'S WATER LAW</u>

Most states west of the One Hundredth Meridian are under Spanish Water Law, Prior Appropriation - *First in time, first in right.*
If your state is east of the One Hundredth Meridian, you may be under English Water Law (Riparian).
Find out which Water Law your state's under then learn it well.

4.
5. ch
6.
7.

Hereon, we'll use Colorado as an example of Spanish Water Law.

1. When "Water" is put to beneficial use, user perfects Water as his or her Vested Water Right: i.e. "First in time, first in right."

2. For example, in Colorado, the first person to use a quantity of water from a water source for a beneficial use has the right to continue to use that quantity of water and in the first in time, first in right order.
   a. One can discern Senior from Junior by date of beneficial use, for it *"goes with the flow."*
   b. Colorado Constitution states "Water." It does not differentiate surface and ground; only chronological dates of beneficial use of "Water."
   c. Ground, surface, alluvial aquifers, wells etc. are connected, inseparable, (and should be used in combo) and therefore constitute "water."
   d. The water molecule never completely vanishes. It relocates. Example: Once upon a time, surface water was ground water, and ground water was surface water and so forth.
   e. Beneficial Water users were given an "Allotment Quantity" that Water Engineers recorded along with their date of Adjudication.

3. Subsequent users from the same source can use the remaining water for their own beneficial purposes provided that they do not impinge on the rights of previous users.
   a. Allotment Quantity trumps Consumptive Use in overall value.

4. Each water right has a yearly quantity and an appropriation date.
    a. There's a margin between "Allotment Quantity" and "Consumptive Use." Unless specified otherwise, a water seller usually sells the Consumptive Use amount and retains the difference between that and his original Allotment Quantity.

6. Each year, the user with earliest appropriation date (known as the "senior appropriator") may use up to their full allocation (provided the water source can supply it). The user with the next earliest appropriation date may use their full allocation and so on.

7. In times of drought, both senior and junior users might not receive their full allocation or even any water at all.

8. Shortages do not result in sharing of the resource or any diminishment of the amount the senior appropriator can take, provided there is enough water for that.

9. When a water right is sold, it retains its *original appropriation date*.
    a. Date “Water” is put to beneficial use is the “original appropriation date” and only date that legally counts; not the date of surface or well.

10. Only the amount of water historically consumed can be transferred if a water right is sold. Example: If alfalfa is grown, using flood irrigation, the amount of the return flow may not be transferred, only the amount that would be necessary to irrigate the amount of alfalfa historically grown.

11. If a water right is not used for a beneficial purpose for a period of time it may lapse under the *doctrine of abandonment.*
    a. If you have a senior date and been denied use of your Water Right, before 10 years are up, at the least use the margin between your Allotment Quantity and Consumptive Use.

12. No law, act of congress or statute has extinguished the Beneficial Use of Water as Vested Property. Water as a Vested Property Right can be *bought, sold, conveyed and stolen, and is taxable by state.*

13. Federal does not naturally own water. It must purchase water from states/private parties/ditch companies etc.

14. No government agency has control over Water that does not fall within the strict definition of “Navigable for Interstate Commerce.”
    Example: Colorado does not have Water that is used in Interstate Commerce. Therefore, no government agency (includes EPA) has authority over Water in Colorado. Partial source: http://water.wikia.com/wiki/Prior_appropriation_water_rights

15. Food security is a matter of national security. Therefore, we should take every measure possible to insure our Water goes foremost…to food production.

***Vested Property Right**

C.R.S. 37-82-104 (2013)
37-82-104. Not to impair vested rights
Nothing in sections 37-82-103 to 37-82-105 shall be construed to amend or repeal section 37-82-102; or impair, diminish, or destroy any valid appropriation of water for any beneficial use which has been made or decreed in accordance with law; or modify, amend, or affect any decree of court or the statutes limiting the time wherein appropriators must appear for determination of priorities of right for diversions from natural streams or the decisions of the courts construing the statutes. C.R.S. 38-30-102 (2013)
38-30-102. Water rights conveyed as real estate - well permit transfers - legislative declaration - definitions 2. No diversions allowed
C.R.S. 37-81-101 (2013)
37-81-101. Diversion of water outside state - application required - special conditions – penalty "…it is unlawful for any person, including a corporation, association, or other entity, to divert, carry, or transport by ditches, canals, pipes, conduits, natural streams, watercourses, or any other means any of the water resources found in this state into any other state for use therein…"

***Irrigation**

Section 5. Water of streams public property. *The water of every natural stream, *not heretofore appropriated,* within the state of Colorado, is hereby declared to be the property of the public, and the same is dedicated to the use of the people of the state, subject to appropriation as hereinafter provided.
Section 6. Diverting unappropriated water - priority preferred uses. The right to divert the unappropriated waters of any natural stream to beneficial uses shall never be denied. Priority of appropriation shall give the better right as between those using the water for the same purpose; but when the waters of any natural stream are not sufficient for the service of all those desiring the use of the same, those using the water for domestic purposes shall have the preference over those claiming for any other purpose, and those using the water for agricultural purposes.
**It is our understanding that all water of every natural stream in Colorado, is in beneficial use and is therefore appropriated.*

LAND AND WATER USA

www.LandAndWaterUSA.com
LandAndWaterUSA@gmail.com

P.O. Box 155

LaSalle, CO 80645

Submitted on Tuesday, September 15, 2015 - 07:28

Submitted by anonymous user: [165.127.10.2]
Submitted values are:

First Name: Ronita
Last Name: Sylvester
Affiliation:

Email: ronibell@msn.com
Phone (Example: 000-000-0000): 970-284-6874

Cell Phone (Example: 000-000-0000):
River Basin: South Platte
Constituent Group: Agriculture
Comments to be considered in Colorado's Water Plan:

If the EPA could legally take your Water Rights –

-they would have done so by now!
Opportunity for one to acquire and enjoy private property is the foundation that has made America the great, desirable destination for so many.
Due to the confusion swirling around the Environmental Protection Agency's (EPA) recent attempt to clarify the Clean Water Act, we offer the following, for it is critical to first identify whose Water Rights EPA may or may not have authority over.
Removing Water Rights outside EPA's authority will lessen confusion and reduce costs.
For Consideration:
Remember: If State's or Federal Government could legally take your Water Rights, they would have done so.
If EPA employees could legally take your Water Rights they would have initiated real estate contracts in conjunction with EPA's formation by President Nixon in 1970.
If President's Nixon, Ford, Carter, Reagan, Bush, Clinton, Bush, Obama could have taken your water rights, legally, they would have had plenty of time to do so over the 45 years since.
EPA employees, including its present Secretary, Gina McCarthy and even President Obama, cannot take your Water Rights without just compensation.
No one is above the law, and no one has constitutional or statutory authority to help themselves to your Water Rights. Unfortunately, there are those who are so hell bent to seize control of your Water Rights they are violating Acts of Congress, Statutes, and your State's and U.S. Constitution. You

have a duty to stop them!
Here's how to stop those trying to seize control of your Water Rights: Congress, Farmers Union, Farm Bureau, General Assemblies, Cattlemen's organizations, Food Growers, Resource Providers and Water Right Owners, should join together and demand Congress place a moratorium on regulatory action regarding water until all Water Rights are fully disclosed.
Congress should demand EPA Secretary McCarthy provide verifiable documentation to the following 5 requirements to determine Water Rights the EPA does not have authority over, and narrow the focus on Water Rights the EPA does have authority over; keeping in the fore the statute definition of *navigable.

1) Provide an accurate list that identifies each individual waterway in the United States which does not fall under the definition of *navigable. For example: There isn't one waterway in Colorado that falls under the definition of navigable.
2) Provide an accurate list that identifies each waterway in the United States, which does fall under the definition of navigable.
3) Provide an accurate list of water related actions the Bureau of Reclamation has authority over.
4) Provide an accurate list of water related structures the Army Corps of Engineers has authority over.
5) Provide an accurate illustration that shows the lead federal agency that heads other agencies. This will eliminate that question, "Who's on first."

There are many states that can provide visuals that will show the vast difference between navigable and non-navigable. And because we live in Colorado, we'd be honored to show Congress close by examples of navigable (NE), and non-navigable (CO/WY) water.

Questions regarding the S. Platte River 5/13/2015

1) 2005/2006 Lower end (junior) of S. Platte River claimed, "upper end (senior) took our water, caused depletions, now we don't have any water." Regardless the fact lower end did not have to prove harm, Judge Roger Klein still ordered upper end: shut down wells (deny senior owners use of their property); augment at 100% (unattainable); make up for past depletions going back to 1975 (Where were water engineers during that 30 year time span?).
2) 2005/2006 Governor Owens apparently "found" enough water to commit to NE. How and where did Governor Owens find water the lower end claimed didn't exist?

3) The 5 page PRRIP agreement commits states assets, "water," and indebted (financial commitment) without a vote of the citizenry. Did states bypass their general assemblies?
4) Because CO does not have water (to send NE), why not withdraw from PRRIP? CO apparently "looses" thousands of acre feet water across the border to NE, why isn't this water used to fulfill PRRIP demand instead of CO's having to meet the financial commitment for non-delivery?
5) Even though the PRRIP is the gorilla in the middle of the room, it is never included in any water meeting discussions or the "statewide" water plan. Why?
6) Where may water owners review funding receipts and expenditures of the PRRIP?
7) Can Colorado provide the compact between the lower and upper end of the S. Platte wherein it's apparently declared the upper end committed X acre feet water to the lower end? If one exists, why wasn't it structured as forgiving as the 1923 NE/CO compact (based on 1897 flow rates/precip and snowpack)?
8) Because flow charts show S. Platte River historically dried up around Kersey, CO (depending on snow pack/precip), will lower end provide their dates of appropriation and allotment quantity?
9) Have upper end senior owners been justly compensated for takings (denied use of their water)?
Since the following questions, May 9th/10th/11th we faced another flood. Not the magnitude of 2013, but none the less it backed up in part due to: over hydration of upper end, Hwy 85 bridge and Latham ditch blockage and lack of maintenance on the North side of the S. Platte (directly across from Sylvester Farm). Residents, including Fred Stencil and Ramon and Olga Salazar, and the towns of Gilcrest and Evans were significantly impact...again.

One solution: If the lower end needs "relief," please consider building a concrete sided ditch (either in the meridian or barrel pit) along I-76. The river is an inefficient way to move water. Concrete sided ditch would provide the benefits of: Naturally eradicating phreatophytes, creating jobs, reducing evaporation and catch rainfall. After the senior upper end's allotment quantities are fulfilled, whatever's left could be moved to the lower end via ditch. _____

Questions regarding the S. Platte River 5/5/2015

1) Whose water right are you talking about? It's imperative this be addressed, for to date, misleading, incorrect information is used in most

news reports.
A student of Dr. Reagan Waskom's developed a "Date of Appropriation" overlay on the development of water on the S. Platte. We recommend this be shown at the onset of each meeting, to more properly identify water rights.
2) WAS case lacked defined plaintiffs and defendants. Attorney Akolt represented all in spite of requests to Judge Roger Klein for Akolt's withdrawal from at least 1 side.
Lower end (east of Kersey) claimed upper end (west of Kersey) used up their water (depletions), but didn't have to prove harm. Klein ordered shut down of wells, 100% augmentation (which is hydrologically unattainable), and makeup of past depletions to 1975.
Questions: Where were the water engineers for the years between 2005 and 1975? Aren't they supposed to "manage" the water? Did they avert their eyes for 30 years while senior (upper end) users allegedly "overused" this significant amount of water?
3) Why don't the state engineers do the job the statutes require them to do?
4) The 5 page 2006 PRRIP agreement with Governor's Freudenthal (WY) and Heineman (NE), DOI Secretary Kempthorne and Governor Owens committed water and money to alleged endangered species in Lexington, NE.
When the lower end complained (during that same time period), "we don't have any water," where and how did Owens find water to meet with that commitment?
5) In-stream flow manipulations contribute to the loss of thousands of acre feet water over the CO-NE border. Yet John Stulp informed us, "Because we sometimes can't meet our water commitment to the PRRIP, we have to make up for it with the financial. Who makes up the PRRIP governance committee? Is there a PRRIP water and financial audit available?
6) Does the lower end have a compact with the upper end to mandatorily deliver X acre feet to them? If not, how did it come to be their water delivery demands now supersede the Senior upper end rights? Particularly when historically, there wasn't water in the river?
7) Does state intend to justly compensate the upper end Senior water right owners for *takings?
8) Will state compensate the Town of Gilcrest for state's participation in allowing the over hydration of the upper end to the extent of raising the water table from its historic approximate 20 feet to 2 feet and surfacing - which destroyed Gilcrest's waste water treatment plant.

9) Because Reuter-Hess Reservoir is built on a hill with claims, "we'll fill with runoff," how is it said runoff now appears in the form of an approximate 27 acre feet daily? It's been heard that Bob Lembke and Bill Owens might be peeling off S. Platte water and circuitously piping it - perhaps to Parker Water/Reuter-Hess?

10) How can James Eklund develop a Colorado Water Plan and exclude the PRRIP and other major elements that are controlling our water?
It's common knowledge that Klein's shut down of wells overhydrated the upper end wherein the lower end now uses this over surplus of water to successfully develop an underground reservoir (in the upper end) from which they use this new non-historic perennial flow to build ponds, divert, retime and sell (perhaps to the power plant, federal, Lembke, Owens, pop new pivots?).
Thousands of acre feet allegedly are "wasted" (lost) across the border to NE, yet no one's actually seen said water across the border in Nebraska. Maybe that's why Stulp's claim about the financial commitment?
Upon hearing about said waste, Jim Jahn said, "Yeh, and we're getting all the water you guys on the upper end waste! And I live on the CO NE border!"
I responded, "First off, the upper end doesn't have any water to waste! And if the upper end wasn't denied use of its water, there wouldn't be any water flowing past your place."
He responded, "It wouldn't make any difference at all."
My immediate unspoken thought? Jahn, you completely dashed the entire WAS argument!
I'll stop here. There are many more questions we'd appreciate media asking each person they interview; beginning with the most important question of all: "Whose water right is it?" Followed by, "Are state engineers doing the job the statutes require them to do?"
The Hwy 85 bridge south of Greeley is another story. For now, please know that because the S. Platte falls outside the defines of "navigable," the EPA and Army Corps of Engineers have no authority over it. Is this why the Army Corps has never maintained it? Governor Hickenlooper should, at-the-least, give the EPA and Army Corps the boot when conjoining private property owners get out their excavators.
Bob Longenbaugh, hydrological engineer, has over a 50 year history of studying, teaching and managing water in CO. He's partisan and dedicated to the science only! We urge you to contact him. (970) 209-9297

Federal Water Pollution Control Act
(33 U.S.C. 1251 et seq.)
AN ACT To provide for water pollution control activities in the Public Health Service of the Federal
Security Agency and in the Federal Works Agency, and for other purposes.
Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,
TITLE I—RESEARCH AND RELATED PROGRAMS
Declaration of Goals and Policy

SEC. 101. (a) The objective of this Act is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. In order to achieve this objective it is hereby declared that, consistent with the provisions of this Act— - it is the national goal that the discharge of pollutants into the *navigable waters be eliminated by 1985;
33 U.S.C. §1251 et seq. (1972)
The Clean Water Act (CWA) establishes the basic structure for regulating discharges of pollutants into the *waters of the United States and regulating quality standards for surface waters. The basis of the CWA was enacted in 1948 and was called the Federal Water Pollution Control Act, but the Act was significantly reorganized and expanded in 1972. "Clean Water Act" became the Act's common name with amendments in 1972.

*Waters of the US Under Title 40 Code of Federal Regulations (CFR), Section (§) 122.2 "Waters of the United States" or "waters of the U.S." has a specific meaning:
(a) all waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide; (b) all interstate waters, including interstate wetlands;
(c) all other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sand flats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds that the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:
(1) which are or could be used by interstate or foreign travelers for recreational or other purposes; (2) from which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or (3) which are used or could be used for industrial purposes by industries in interstate commerce;
(d) all impoundments of waters otherwise defined as waters of the United States under this definition; (e) tributaries of waters identified in paragraphs (a) through (d) of this definition; (f) the territorial sea; and
(g) wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) through (f) of this definition.
Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR § 423.11(m) which also meet the criteria of this definition) are not waters of the United States. This exclusion applies only to manmade bodies of water which neither were originally created in waters of the United States (such as disposal area in wetlands) nor resulted from the impoundment of waters of the United States. Waters of the United States do not include prior converted

cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA.

*The term "navigable waters" of the United States means "navigable waters" as defined in section 502(7) of the FWPCA, and includes: (1) all navigable waters of the United States, as defined in judicial decisions prior to the passage of the 1972 Amendments of the Federal Water Pollution Control Act, (FWPCA) (Pub. L. 92-500) also known as the Clean Water Act (CWA), and tributaries of such waters as; (2) interstate waters; (3) intrastate lakes, rivers, and streams which are utilized by interstate travelers for recreational or other purposes; and (4) intrastate lakes, rivers, and streams from which fish or shellfish are taken and sold in interstate commerce

Submitted on Tuesday, September 15, 2015 - 07:43

Submitted by anonymous user: [165.127.10.2]
Submitted values are:

First Name: Ronita
Last Name: Sylvester
Affiliation:
Email: ronibell@msn.com

Phone (Example: 000-000-0000): 970-284-6874
Cell Phone (Example: 000-000-0000):
River Basin: South Platte
Constituent Group: Agriculture
Comments to be considered in Colorado's Water Plan:
Colorado Attorney General Cynthia Coffman
Ralph L. Carr Colorado Judicial Center
1300 Broadway, 10th Floor
Denver, Colorado 80203

Regarding: Fraudulent Water Accounting Complaint June 29, 2015

Dear Attorney General Coffman,

Please consider this my formal complaint regarding the fraudulent accounting of water as pertains to the South Platte River in Colorado.

Reason for my complaint:

Here's what happen. I live on my 145 year old farm, located near Greeley, CO and on what is considered as a part of the flood plain of the South Platte River.

Most of my 78 years have been spent living here, for my family homesteaded here in the late 1860's.

Having a passion for water was instilled in me by my father Charles W. Sylvester Sr. He passed along our forefathers studies, and taught me how to

"read the river."

Sixty five years ago, my classmate Ray Sauer and I rode our bicycles in and

around an abandoned beet pulp storage pit. Remembering the pit, which is about 20 feet deep, had water at the bottom, I recently called Ray to ask

what he remembered. He confirmed there was scant water at the bottom.

Over the last several years, the water has risen to about 2 feet from the surface of the pit. With the 2013 flood and this past spring's rains, it's surfaced.

Why has this happen? Over augmentation of the upper end of the S. Platte Basin, as confirmed by Dr. Reagan Waskom's study – HB 1278, completed December 2013.

Though my home was built higher than said flood plain, and even higher than the historic water table, on September 13, 2013, it was subjected to 17" of rushing river…on the first floor! In addition to the mental and physical strain of cleanup, it took over a year and has accrued $300,000 in cleanup and restoration.

We believe the 17" inches was completely unnecessary for these reasons:

1)

Due to over-augmentation (see WAS case following) the upper end of the S. Platte basin has been overhydrated. Over hydration has risen the historic water table of approximately 20 feet, to an approximate non-historic 3 feet and surfacing; one could claim this 17 foot rise easily converts to the 17 inches on the first level of our home.

In addition to the man-made rise in the water table, other contributions to the catastrophic flood include: Advent of streets/highways/rooftops, improper ditch diversions, lack of S. Platte river maintenance.

Today, nearly 2 years later, the water table has risen to points of surfacing. With the advent of the wet April/June it was pretty darn traumatizing moving everything to the highest points on the farm, then wondering if the river would flood out our home again, as we watched it continually approach our patio - then recede.

April 17, 2014, we asked Governor Hickenlooper to take action regarding dredging under the Hwy 85 Bridge between Greeley and La Salle, and to deploy an Executive Order to allow senior water rights to pump. To date, nothing has been done

Background

2006 was a pivotal year on the South Platte River:

Why?
1.Lower end junior water users (east of Kersey) claimed upper end senior users used up all the S. Platte water and caused depletions of such severity they did not have any water.
2.To satisfy their complaint, Judge Roger Klein (Well Augmentation Subdistrict (WAS) case) ordered the shutdown of senior wells.
3.Governor Bill Owens signed a 5 page agreement (South Platte River Implementation Program (PRRIP)) with Governor's Freudenthal (WY) and Heineman (NE) and DOI Secretary Kempthorne, committing Colorado assets (water) and indebting the state (financial commitment) without a vote of the citizenry. Colorado and Wyoming will jointly contribute $30 million. The remaining portion will come in terms of land and water from the states. In other words, when the lower end complained they didn't have water, Governor Owens "found" enough to give away several thousand acre feet to ESA in Lexington, NE.

Colorado Water Law

Prior Appropriation – First in time, first in right. You must have

"water" to put to beneficial use and obtain a decree. In other words, first in time first in right - goes with the flow.

The Constitution of the State of Colorado states: Sec. 5. The water of every natural stream, not heretofore appropriated, within the State of Colorado, is hereby declared to be the property of the public, and the same is dedicated to the use of the people of the State, subject to appropriation as hereinafter provided.

Sec. 6. The right to divert the unappropriated waters of any natural stream to beneficial uses shall never be denied.

Constitution does not differentiate between ground, surface etc. – it simply states "water;" for it is a given that all water is connected. Therefore, the first date one puts unappropriated "water" to beneficial use (regardless pivot, well, ditch), it is the original and only date that should be honored as vested property.

Only “unappropriated” water may be filed on. By approximately 1879, the entire upper end of the S. Platte basin had been appropriated and are considered senior. Water rights further downstream have later dates and are therefore junior.

Analysis

General Assembly drafted and Governor Hickenlooper signed into law, a study of the S. Platte River basin known as HB 1278. In this study, Dr. Reagan Waskom found over augmentation, likely due to the shutdown of wells on the upper end of the S. Platte, contributed to the non-historic high water table. Dr. Waskom made a general hydrological recommendation that to lower the water table, well pumping should ensue.

Conclusion

Knowing some of the contributing factors to the non-historic high water table gives reasons enough to believe who-so-ever is managing the vested property of water rights owners is engaged in fraudulent water accounting.

In many ways, this also smacks of embezzlement, in that water rights owners have no choice but to entrust their vested property to others to manage, and those managers are grossly mismanaging said property and converting it into another use.

Attorney General Coffman, I want you to fix this problem.

Why? Senior water rights owners are being cruelly (albeit illegally) denied use of their vested property. The ripple effect of this denied use is causing severe damage to my property!

Here are some steps I want you to take that will help fix this problem.
1.Identify those engaged in fraudulent water accounting.
2.Hold them accountable to curing their takings through just compensation to senior water rights owners.
Inform Governor Hickenlooper that because there are no open waters of the U.S. in Colorado, he should order federal to stay the hell out of the way of property owners along the S. Platte River. They have a right to maintain their property without fear of obstructionism and fines by EPA, Army Corps et al.
3.Stop the man-made manipulations of the S. Platte River’s in-stream flow; it is destroying Agriculture; Colorado’s most historically reliable

economic foundation.
4.Stop use of the upper end of the S. Platte Basin as an underground storage (reservoir); it is rising the water table.

Recommend Governor Hickenlooper withdraw Colorado from the PRRIP. It serves only as a carriage vessel to move water past its historic dry up (around Kersey), and easterly where everyone knows it's being diverted and sold.

It is my understanding that additional parties, including Charles W. Sylvester and Gene and Jan Kammerzell, will be filing their own independent Fraudulent Water Accounting complaints.

I expect your immediate attention to addressing my Fraudulent Water Accounting complaint. Taking the steps I recommended will truly re-establish justice for many injured parties, and return our rights to "safety and happiness" on our property.

Please contact me anytime! H# (970) 284-6874 * C# (970) 430-0222 I want this fixed!

Thank you,

Roni Bell Sylvester

Submitted on Tuesday, September 15, 2015 - 10:09

Submitted by anonymous user: [165.127.10.2]
Submitted values are:

First Name: Ronita
Last Name: Sylvester
Affiliation:
Email: ronibell@msn.com
Phone (Example: 000-000-0000): 970-284-6874
Cell Phone (Example: 000-000-0000):
River Basin: South Platte
Constituent Group: Agriculture
Comments to be considered in Colorado's Water Plan:

Please demand Governor Hickenlooper withdraw Colorado from the Platte River Recovery Implementation Program (PRRIP).
Even though the PRRIP is the gorilla in the middle of the room, it has never been included in any water meeting discussions, nor is it factored in to the Colorado Water Plan. Why?

2005/2006 Lower end (junior) of S. Platte River claimed, "upper end (senior) took our water, caused depletions, now we don't have any water."

Regardless the fact that junior water rights owners did not have to prove harm, Judge Roger Klein still ordered senior water rights owners to shut down wells (Which constitutes a denied use of property.); augment at 100% (unattainable), and make up for depletions going back to 1975.
Judge Klein's order to senior they make up past depletions going back to 1975 begs the question, where were water engineers during that 30 year time span? If they were in charge of "administering" the water rights owners' property, shouldn't they have been held equally accountable for said past depletions?

2005/2006 Governor Owens apparently "found" enough water to commit to NE.

How and where did Governor Owens suddenly find water the lower end claimed didn't exist?

The 5 page PRRIP agreement commits states assets, "water," and indebted

(financial commitment) without a vote of the citizenry. Did governors bypass state's general assemblies?
Because CO does not have water to send NE, why not withdraw from PRRIP? CO

apparently "looses" thousands of acre feet water across the border to NE, why isn't this water used to fulfill PRRIP demand instead of CO's having to meet the financial commitment for non-delivery?

Please make public all funding receipts and expenditures of the PRRIP.
Can Colorado provide a compact between the lower and upper end of the S.

Platte wherein it's apparently declared the upper end committed X acre feet water to the lower end? If one exists, why wasn't it structured as forgiving as the 1923 NE/CO compact (based on 1897 flow rates/precip and snowpack)?

If none exists, then please correct all documents that claim the lower end as "senior," and the upper end as "junior," and allow the water engineers to "administer" water in strict adherence to Colorado's "Prior Appropriation." Upper end senior owners have been denied use of their water - some since 2005. Have any been justly compensated for these takings? If not, why not? A return to administration of the water according to “First in time, first in right,” will correct the non-historically high water table problem along the S. Platte River basin.

Because flow charts show S. Platte River historically dried up around Kersey,

CO (depending on snow pack/precip), the lower end should be required to provide their dates of appropriation and allotment quantity. This will help water engineers do a more accurate job of administering the water.
Summary: Withdraw Colorado from the PRRIP, and return “Prior Appropriation” water administration to the engineers.

Submitted on Tuesday, September 15, 2015 - 07:40

Submitted by anonymous user: [165.127.10.2]
Submitted values are:

First Name: Charles
Last Name: Sylvester
Affiliation:
Email: Farm_Cowboy@msn.com
Phone (Example: 000-000-0000): 970-284-6874
Cell Phone (Example: 000-000-0000):

River Basin: South Platte
Constituent Group: Agriculture

Comments to be considered in Colorado's Water Plan:

Colorado Attorney General Cynthia Coffman
Ralph L. Carr Colorado Judicial Center
1300 Broadway, 10th Floor
Denver, Colorado 80203

Dear Attorney General Coffman,

Regarding: Fraudulent Water Accounting Complaint July 6, 2015

Please consider this my formal complaint as pertains to what I deduce as fraudulent accounting of South Platte River water in Colorado.

Reason for my Fraudulent Water Accounting complaint:

Here's what happen. I live on my 145 year old farm, located near Greeley, CO and on what is considered as a part of the flood plain of the South Platte River.

Most of my 78 years have been spent living here, where my family homesteaded in the late 1860's.

My passion for water was instilled in me by my father Charles W. Sylvester Sr. He passed along water studies by my forefathers, and taught me how to "read the river."

Sixty five years ago, my classmate Ray Sauer and I rode our bicycles in and

around an abandoned beet pulp storage pit, east of LaSalle. Remembering the pit, which had water at the bottom in the deepest parts about 20 feet below surface, I recently asked Ray what he remembered. He confirmed there was scant water at the bottom.

Beginning around 2006, the water has risen to about 2 feet from the surface near the pit, now filled in.

With the 2013 flood and this past spring's rains, it's surfaced.

This high water table is destroying crops, as well as the land for future crop production.

Why has this happen? Over augmentation of the upper end of the S. Platte Basin, as confirmed by Dr. Reagan Waskom's study – HB 1278, completed December 2013.

The junior lower end told Judge Roger Klein that senior well pumping was causing them depletions in the upper S. Platte Basin, Denver to Greeley, thus limiting instream flow for the lower end. They didn't have to show scientific burden of proof of harm, and Klein ruled in their favor.

A drain (seepage) ditch, which runs through my farm, has never once stopped flowing in over a hundred and forty years. Therefore, I don't believe pumping by the senior water right owners caused depletions.

When the Pioneers settled along the S. Platte in the Godfrey Bottom area, this is what they found.

Some of the land was swampy, had standing water, cattails and reeds. So they dug this drain ditch (known as Latham Drain) with ox teams, horses and slips. This drained the standing water so the farmers could began using the fertile land for crop production.

The Latham Drain has drained water continuously for over 140 years.

There's negligible difference between times of severe drought, high precipitation, Allotment Quantity usage, and the increased river flow due to the past 9 years senior water rights have been denied use of their Allotment Quantities from wells.

The water has drained from surrounding areas including east of LaSalle. Water still runs downhill by gravity flow whether above or below the earth's

surface.

The Godfrey Ditch Company was formed March 10, 1870 in Weld County, Territory of Colorado, with Allotment Quantities for the stockholders.

The nearby town of Gilcrest, is being subjected to high water levels, due to the over augmentation. This is destroying the town's sewage treatment plant, flooding basements and destroying essential crop land.

As my father used to tell me, when the river was running high or flooding, the water flowed outward under pressure and helped fill the aquifer. Now the aquifer is theoretically filled with water placed on the surface to fill the aquifer below.

Water rights were also bought by a water district, which then dried up productive food production farm land.

When the river receded, the water flowed gradually back to the river and helped develop a continuous instream flow. Depending on snowpack/precipitation, the river would generally dry up around Kersey, CO. in the early 1900's.

Sometimes there wasn't enough water to fulfill Allotment Quantity delivery for either the most senior water rights on the upper end, or junior water rights on the lower end.

It is my humble opinion, Judge Klein was wrong in his decision to shut down the wells. What I've learned is that he was allegedly subjected to a combo of, withholding critical scientific information, and undue influence by power brokers. This resulted in his "Takings without just compensation" ruling.

Please note that where the majority of senior water rights are, from Greeley to Denver we refer to the judge with honor, as Judge Roger Klein. Contrarily, on numerous occasions we've heard those living in the lower South Platte Basin, or about Ft. Morgan to the Colorado Nebraska border, refer to the judge as "Roger." Probably because Judge Klein had a law practice in Sterling, where junior water rights oppose every move senior water rights have tried, to use their own property.

In sporting event terminology, it sure looks evident the lower end "home towned" the upper end.

Coming with the 10 year mark of "senior water rights owners denied use of property" (aka no well pumping), new concerns loom on abandonment. We're

already hearing about water brokers trying to claim those wells as "abandoned," and file on them.

If those in charge of managing our water according to *Colorado Water Law had adhered to our first in time, first in right law, I strongly believe we wouldn't be subjected to the severe damages brought about by Fraudulent Water Accounting.

Bottom line: The upper S. Platte Basin has become the storage area to insure more water from instream flow for the lower S. Platte to use.

Historically, in the early 1900's, the lower S. Platte Basin had very little water to use after the spring's May and June runoff. Starting around the first part of August through the end of October, the river usually dried up.

I have in my possession, an 1893 book with flow charts, dates and documents that back up my statements.

It wasn't until additional irrigation development in the upper S. Platte Basin, with water being placed on the land and the non-consumptive use, water flowed underground back to the river. This insured a continuous water flow seasonally later and farther east.

In hydrological terms, this is called timing; delaying the river flow to insure a continuous instream flow of water in the river.

If you travel on I -76 to the Sterling area and east, you will see an abundant number of pivots on a circle of land, where acreage was historically fallow semi-arid desert. The water run through these pivot irrigation systems are primarily from a well near the circle.

Now, the junior lower end not only has sufficient water from the S. Platte river flow to irrigate their crops, they have additional water to augment new wells.

It's common knowledge the junior lower end users also have enough surplus water to sell to the electrical generating plant at Brush, to federal for the Platte River Recovery Implementation Program (PRRIP), and perhaps to wind turbines and ethanol.

Yes. I believe the junior lower end users are making millions by destroying the rights of senior upper end users, and harming a multitude of private

property owners.

Thank you for the time and effort you'll take, looking into my Fraudulent Water Accounting complaint. Your efforts are greatly appreciated.

Please contact me anytime at: H# (970) 284-6874 * C# (970) 430-0110

Thank you,

Charles W. Sylvester

*Colorado Water Law

Prior Appropriation – First in time, first in right. You must have "

PUBLIC INPUT ITEM 74

GWC
Getches-Wilkinson Center
for Natural Resources, Energy,
and the Environment

University of Colorado Law School
401 UCB
2450 Kittredge Loop Road
Boulder, Co 80309
www.colorado.edu/law/research/gwc
gwc@colorado.edu

September 17, 2015

Mr. John Stulp
Mr. James Eklund
Ms. Rebecca Mitchell
Mr. Jacob Bornstein
Colorado Water Conservation Board
1313 Sherman Street, Room 720
Denver, CO 80203

Re: Colorado's Water Plan

Ladies and Gentlemen:

The Getches-Wilkinson Center (GWC) serves the people of the American West, the nation, and the world through creative, interdisciplinary research, bold, inclusive teaching, and innovative problem solving in order to further true sustainability for our lands, waters, and environment. GWC believes that Colorado's Water Plan represents the best opportunity our state has had in multiple decades, and will have for decades to come, to shape the future of sustainable water management in the State of Colorado for the benefit of multiple interests. GWC has received funding from an individual donor, the Walton Family Foundation, and the Gates Family Foundation, all of whom are deeply invested in Colorado water issues, to provide practical recommendations for action on and implementation of Colorado's Water Plan.

GENERAL COMMENTS ON THE PLAN

Colorado's Water Plan is a Tremendous Achievement – Colorado's Water Plan (CWP or Plan) is comprehensive, sensible, thoughtful, appropriately ambitious, and a significant step toward a sustainable water future for the State of Colorado. Colorado is once again taking the lead among the western states--this time in developing a statewide plan based on local community-supported concepts. We are grateful for the immense effort that has gone into formulating the Plan, soliciting and incorporating a vast number and variety of comments, and keeping interested groups informed. We are proud of the CWCB staff and board members for undertaking and completing this excellent effort. The challenge ahead is to turn all this good work into implementable actions. These comments are offered in the spirit of our collective interest in a practical, action-oriented plan that can guide the state through a sustainable water future.

Prioritization of Proposed Actions - The Plan describes a large number of proposed action items, both inside and outside of Chapter 10. The sheer number of "critical" actions assigned to the CWCB alone is overwhelming. As good as the staff of the CWCB may be, we are concerned that they cannot possibly accomplish all that is assigned to them in the Plan, or even solely in Chapter 10. The Plan's actions collectively have substantial merit and reflect in-depth thinking about implementation of the Plan. But in order to make a meaningful difference and avoid too great a dilution of effort, this basket of actions must be prioritized. There is a clear need to examine these proposed actions, to more clearly articulate their purposes, and to prioritize their achievement on the basis of both importance and availability of resources.

The actions that have the largest beneficial impact on the objectives in the Plan (as embodied in the statement of challenges listed on page 4 of the Plan) should clearly have the highest priority. As an example, Alternative Transfer Methods may provide the best opportunity to reduce agricultural dry-up, a key objective of the Plan, so facilitating ATMs should be a high priority action. There are also sequencing issues, in that some tasks must necessarily be completed or in progress before others can begin. An example is developing an integrated, sustainable funding plan (Chapter 10, Action I.b.1) before working on establishing a loan repayment guarantee fund (Chapter 10, Action I.c.2). Finally, the aggregate of short-term, high priority actions should impact multiple water interests, so that no one sector is either neglected or bearing too great a burden of the initial activity.

We have examined the actions proposed in Chapter 10 and those listed in Chapters 6 through 9 that are not in Chapter 10. Our recommendations for actions to be designated as high priority, to be accomplished in the near term, are provided in the Attachment to this comment letter. In addition to those actions listed in the second draft of the Plan, there are a few other actions that we also believe are critical to accomplishing the objectives of the Plan, and those too are listed in the Attachment.

Criteria for Projects and Programs to be Supported and Funded – It is generally recognized that additional significant funding will be needed in order to address water gaps, promote agricultural and environmental viability, and prepare for climate change. However, we know from experience that public funding for water issues is unlikely to be supported in Colorado unless the specific use of the requested funds is specified. The basin roundtables have begun this process with the Basin Implementation Plans (BIPs), but the projects initially included in these BIPs have not necessarily been evaluated in terms of their consistency with the State's objectives in the Water Plan.

The highest priority items from the BIPs are to be forwarded to the CWCB in a request for funds from the Water Supply Reserve Account (WSRA). Even if additional funding is obtained for the WSRA, the recognized substantial funding needs, the other uses of WSRA funds both current and proposed, and the desire to make funds available to all

nine roundtables, collectively suggest that it is critical the CWCB provide clear guidance to the roundtables and other prospective applicants for funding about how funding decisions will be made. The development of guidance is anticipated in Chapter 10, Action II.d.2, but we recommend the Plan identify, at least in general terms, the criteria that will be be used to determine the use of limited funding. When these criteria are made explicit, applicants will shape proposals to meet them.

The discussion on pages 337-38 of the Plan indicates that the CWCB will prioritize projects that already have some funding committed, are multiple-purpose, have multiple partners or provide multiple benefits, and are regional. Additional factors are identified in the context of designating projects for state endorsement to streamline permitting (pages 368-69) but are not tied explicitly to funding decisions. These factors, however, provide a good start for more explicit criteria the CWCB will use to make funding decisions. We recommend that the criteria also include contributions to agricultural viability, environmental benefits, and climate change resiliency, in order to be consistent with the Plan objectives.

The U.S. Bureau of Reclamation's WaterSMART application process provides an example of explicit criteria used to determine funding and a detailed weighting system for each criterion and sub-component. This provides transparency to applicants and a thorough understanding of the importance placed on various components of an application. *See* http://www.usbr.gov/watersmart/weeg/docs/foas/FY15_WEEG_FOA.pdf. Another example comes from the Texas state assistance fund for projects in the Texas state water plan. The criteria used to make funding decisions have been incorporated into the state's administrative code, and include specific points for the gains in conserved water or agricultural efficiency to be obtained through the project, the diversity of rural and urban population served, and the existence and degree of local funding. *See* Texas Administrative Code Sec. 363.1304. Proposed funding criteria for the CWCB have been drafted by Western Resource Advocates (WRA) and are included in WRA's comments on the second draft of the Plan. These criteria have been thoughtfully designed and should be given due consideration by the CWCB.

One specific note on funding criteria: We urge the CWCB to carefully consider whether public funds should be used to subsidize the cost of municipal water supply projects, thereby reducing the cost of water to the end user. The Plan at pages 338-39 points out that many municipal customers do not understand or appreciate the true cost of developing and providing a drinking water supply. The funding criteria should not prioritize the use of public funds in a manner that further disguises the actual costs of providing a municipal supply.

State Commitment to Action – In order to make meaningful progress, the Governor should explicitly put the weight of his support behind the actions he believes to be critical to success. For example, if the final Plan endorses the proposal to amend the CWCB's legislative authority to allow funding of treated water supply, reuse, conservation, environmental, and recreation projects and methods (Chapter 10, Action

I.a.1), the Governor can pledge his support for such a measure and articulate the sound reasoning behind it. The issuance of an executive order supporting the prioritized critical actions and directing the executive branch agencies to carry out designated priorities would transform the CWP into real action. Just as the 2013 executive order catalyzed the basin roundtable planning process into a statewide, comprehensive plan, a new executive order would send a very clear message about the importance of the critical actions, increase the likelihood that actual progress occurs, and provide a tremendous sustainable water legacy for the Hickenlooper administration.

Climate Change Response – The Plan recognizes the existence of climate change and acknowledges its importance in planning for our water future. But aside from general comments about the possible effects of warming on water demands and water supply, the Plan offers no insight into what kinds of responses may be necessary. Nor do the actions outlined in Chapter 10, Actions VI.e, establish a very clear strategy for addressing the challenges presented by climate change. As is recognized in the Plan, the current IBCC no- and low-regrets actions and SWSI 2010 gap calculations do not take into account the potential effects of climate change, even though it is reasonable to expect that the projected water supply gap is likely to increase (page 112). This is one important reason why adopting the municipal conservation stretch goal is highly important. The issue of climate change should be addressed in the 2016 SWSI with a careful analysis of the likely and potential impacts of warming on Colorado's water supply and demand and how the State should be proceeding to manage the associated adverse effects.

Future of Basin Roundtables and IBCC - Very little attention is given in the second draft of the Plan to the future role of the basin roundtables and none to the IBCC. These entities have demonstrated their value in bringing together a wide array of interests, developing improved understanding of issues, and developing goals, ideas, and proposals that have shaped the development of the Plan. Based on materials provided to the IBCC subsequently to the issuance of the second draft of the Plan, it appears that the basin roundtables are expected to move ahead with implementation of their BIPs. The roundtables, however, are volunteer organizations and while they can encourage and support action, they are not presently constituted to take the actions required for implementation. We believe consideration should be given to institutionalization of the roundtables in a manner that will enable them to actively promote further development and implementation of the BIPs.

There seems to be some question as to whether the IBCC will be continued as an active organization. We believe there is continuing need for this statewide group that is focused on the issues associated with implementation of the Water Plan. We strongly encourage more focused attention to the role of these both the IBCC and the basin roundtables before finalization of the Plan.

CHAPTER 6 - WATER SUPPLY MANAGEMENT FOR THE FUTURE

Section 6.3: Conservation – The CWP appropriately recognizes the key role of conservation in meeting Colorado's project water supply gaps, and the important corollary that no one sector can or should be relied upon to bear the entire burden of the projected conservation goals (Chapter 6.3).

a. Section 6.3.1: Municipal and Industrial Conservation – Much has been done to improve water use efficiency in Colorado's large and medium-sized cities. Given the limited resources available to the State to work on this issue, we suggest focusing on those areas with the highest projected rates of growth that are outside of urban water supply areas with existing conservation programs. It is the water demands associated with new growth that are driving the Water Plan. The State should identify those jurisdictions that are responsible for approving new development and do not currently have active conservation programs, especially in the Front Range, and work with them to encourage the incorporation of best management practices for water conservation.

We support requiring water suppliers seeking public funds or a state agency permit to demonstrate they have taken, or will take, feasible steps to implement best management practices for water conservation, as provided in Chapter 10, Action III.a.1. (this action is currently more broadly worded and we recommend clarifying this item to make clear that this requirement would only apply to those seeking public funding or a state agency permit). We also support Action III.a.2.'s purpose of providing technical support and training but would encourage focusing this on the smaller and newer water suppliers in areas of expected growth, as suggested above.

We strongly support adoption of the stretch goal of reducing the projected 2050 municipal demand by 400,000 acre feet through active conservation, as suggested in Chapter 10, Action III.a.4 and at pages 171-72. Evidence from around the West demonstrates the remarkable conservation gains in urban water use in recent years, but it is clear that opportunities for further gains still exist. Reducing the amount of additional water that urban areas will require has the additional benefit of taking pressure from irrigated agriculture and from already highly developed streams and aquifers. These multiple benefits make conservation the first best strategy for meeting future needs, as has been repeatedly stated by Governor Hicklenlooper.

We encourage the CWCB to move ahead immediately to provide guidance to all covered entities required to submit conservation plans regarding how land use planning can best be used to help reduce new water demands, as now required under Senate Bill 2015-008. This commitment is identified in Chapter 10, Action III.c.2.

b. Section 6.3.4: Agricultural Conservation – Efforts are underway across the State to improve the productivity of water use in irrigated agriculture, often associated with related environmental benefits, but driven primarily by the benefits they provide to the farmer/rancher. We support the proposed actions (Chapter 10, Action IV.b.2., and

Action 2 on P. 198) that would make funding available for such projects where there are demonstrable public benefits such as improvements in water quality or instream flows. Such projects might be identified by individual irrigators, perhaps in association with conservation interests. Ditch companies and conservancy districts could be encouraged to search for opportunities. Watershed/stream management planning should also be used to identify opportunities. We support Action IV.b.3 to develop voluntary flow agreements to enable voluntarily conserved water to remain instream where that is the desired outcome. As a corollary, we support Action IV.b.5 to develop methodologies for measuring and administering agricultural conserved water. It would be productive for the Plan to make more explicit in Section 6.3.4 what will be done to encourage the identification of agricultural conservation opportunities and to clarify the basis on which funds would be available to support their implementation.

We recommend consideration of support for legislation recognizing the right of a water rights owner to continued ownership, and the right to dispose, of saved consumptive use. Such legislative recognition currently exists in Montana, California, Oregon, and Washington, and provides a secure foundation for farmers in particular to alter their usage of water without fear of loss.

Section 6.3.3: Land Use Connection – As discussed in Section 6.3.3, considerable work is underway by multiple entities to develop guidance and training for local governments interested in integrating water use considerations and water conservation requirements into their land use planning and approval processes. As now mandated by Senate Bill 2015-008, entities obliged to submit water conservation plans to the CWCB will also be required to provide a "full evaluation" of ways that land use planning can moderate water demand. As suggested in Action III.c.2, we encourage the CWCB to move ahead expeditiously with development of guidance to covered entities. We would also encourage special attention to non-covered entities in rapid growth areas that might benefit from funding and technical support to encourage adoption of land use development strategies that moderate water demands.

We further believe that a stronger tie is needed between local land use approvals and water availability considerations. Water supply entities have had limited input into the land use approval process but are expected to find ways to serve new development, even while facing supply gaps for existing demands. We endorse the recommendation of the South Platte and Metro Roundtables for further investigation of options for increased coordination between water utilities and land use planners to better plan for water-efficient growth (page 187).

Section 6.4: Alternative Transfer Methods (ATMs) – Despite the fact that agricultural dry-up is one of the major challenges the Water Plan is intended to address and that ATMs are discussed as essential to provide an alternative to such permanent loss of irrigated lands (see pages 208-209), the actions concerning ATMs proposed in Chapter 10 seem surprisingly modest. While, as the Plan makes clear, we have a lot to learn about ATMs and their consequences, both intended and unintended, it is also clear that

ATMs will never prevail over buy-and-dry transactions until these types of transfers are easier than permanent ones. The State must take a leadership role in developing meaningful alternatives that can help make some irrigation water available for other uses but in a manner that benefits the agricultural economy in order to demonstrate its commitment to reducing the use of permanent water transfers to meet new consumptive use demands.

While the CWCB has taken significant and commendable steps to facilitate ATMs in the adoption of the Criteria and Guidelines for Fallowing-Leasing Pilot Projects and in the development of the Lease Fallowing Tool, the utilization of ATMs remains a daunting process. A key challenge is how to streamline the review process while ensuring that other water users are not unreasonably affected. We now have the ability to determine historic consumptive use and can model the manner in which historic diversion and consumption have affected return flows. Because proving the negative of "no injury" can be tremendously time consuming and expensive, we suggest that an ATM proponent be obligated instead to establish that stream conditions will remain essentially unchanged under a fallowing arrangement. This showing would then create a presumption of no material injury and the burden of proof would switch to the objector to prove an injury. Such an approach would substantially reduce the complexity of the existing process and facilitate valuable arrangements to share some irrigation water with other uses. As suggested in Appendix B to our earlier comments on the first draft of the Plan, entitled "Navigating a Pathway toward Colorado's Water Future," we believe there are other ways the rules governing ATMs could be modified that would also be beneficial.

We recommend that the CWCB establish a working group with representation from key interests to develop a proposal for putting in place a viable program that enables and facilitates ATMs. Such a program could include revising the existing Criteria and Guidelines for Fallowing-Leasing Pilot Projects based on lessons learned from the Catlin Canal pilot project. We urge support and prioritization in the Plan for implementation of the IBCC's no- and low-regrets ATM action items listed in Table 6.4-2 and the items listed in Action 10 on pages 218-219. In addition, in order to facilitate water banks, consideration should be given to support for legislation that would provide a limited exemption for ATMs from the anti-speculation requirements established in the Colorado Supreme Court decision in High Plains A&M, LLC v. Southeastern Colo. Water Cons. Dist., 120 P.3d 710 (2005).

CHAPTER 7 - WATERSHED HEALTH AND MANAGEMENT

Section 7.1: Watershed Planning and Management – We endorse the commitment of the State to support watershed and stream management planning. (Chapter 10, Action V.c.1; page 265, Actions 4 and 5; pages 286-87, Actions 1-7) It would be helpful to have some clarity regarding how this planning work will occur, who will be responsible, what will be considered in the plans, and how much funding will be available. We encourage the initiation of watershed planning processes to identify existing conditions and

determination of actions necessary for desired improvements as identified in the actions described in Section 7.1, page 287. Watersheds with expected new water development projects should be prioritized. We support the actions identified in Chapter 10, Actions V.c.1 and V.c.3 for the CWCB to develop guidelines for stream management plans, programmatic approaches for consideration of projects that will benefit the watershed, and common metrics for assessing watershed health.

One additional opportunity that we believe should be explored is to have the CWCB and the CDPHE work jointly in preparing and supporting watershed plans that simultaneously address water quality interests with other environmental interests such as adequacy of flows to improve aquatic health. As is recognized in the Plan, better integration of water quality and quantity planning and management activities is critical (page 292). By jointly developing watershed plans these agencies can effectively address both quality and quantity concerns on a watershed-by-watershed basis. We support the concepts embodied in Section 2 of House Bill 2015-1380.

Section 7.3: Integration of Water Quality and Quantity - We support the Plan's objective of better integrating quality and quantity concerns in future water management actions. We suggest consideration of having the Governor establish a joint working group including CDPHE, CWCB, DWR, and CPW to identify challenges and opportunities for more deliberate integration. In our view, this integration can best occur in watershed planning processes that are focused on improving the array of benefits that can be provided by Colorado' streams, rivers, and aquifers, as described in the section above.

CHAPTER 8 - INTERBASIN PROJECTS AND AGREEMENTS

Development of Additional Colorado River Supply and the Conceptual Framework – The Plan appropriately promotes statewide cooperation to protect Colorado's ability to fully develop its compact entitlements and agreements that strengthen Colorado's position in interstate negotiations. We fully endorse the decision to focus planning efforts on maintaining healthy systems and avoiding a Colorado River Compact deficit as opposed to a response to compact curtailment (Chapter 10, Action VI.d.5; pages 311, 324, 330).

The authors of these comments have substantial familiarity with the Colorado River Compact, the current status and trends of Colorado River supplies and storage, and the overall management of the Colorado River system. While Colorado should certainly retain all legal rights to develop its entire Compact allocation, it is now clear that no additional remaining allocation is available to Colorado in some years (page 317). As is recognized in the Plan, without thoughtful scoping parameters, development of significant new Colorado River supplies increases the risk of future curtailment to all existing, post-1922 Colorado River water users, reduces the production of renewable hydropower at Colorado River Storage Project reservoirs, and could ratchet up unwelcome and counter-productive political dynamics among the Colorado River Basin States. The IBCC-developed Conceptual Framework mitigates these adverse effects of new water development on the West Slope. This is a revolutionary document and a

quantum leap forward in Colorado water history. The Conceptual Framework is a critically important part of the CWP and should be formally adopted in the Plan and by the CWCB, not just monitored (Chapter 10, Action VI.d.4).

CHAPTER 10 - CRITICAL ACTION PLAN

Stand-Alone Action Plan – We strongly support making Chapter 10 a document that can stand alone as an action plan, can be easily read and regularly updated. While unfortunate, this is the only portion of the Plan that many people may read. We appreciate the restatement of "values" that help serve as the vision of the action plan. But, to make Chapter 10 a stand-alone document, we would encourage the inclusion of some statement of the objectives of the Plan that serve as a guide for the reader to understand the purposes of the proposed actions. The closest thing to a statement of objectives currently in the Plan is the statement of challenges from page 4. We suggest that these be reiterated, or at least cross-referenced, in Chapter 10.

State Agency Participation - The actions listed in Chapter 10 are heavily focused on the CWCB, with some reference to other state agencies. This is a State water plan. We recommend that the final Plan more clearly identify actions to be taken by other state agencies that will be necessary to achieve Plan objectives. Thus, for example, it should identify actions that the Department of Local Affairs could take to strengthen local land use considerations of water use. It could identify ways that the Division of Water Resources could help structure ATMs to facilitate their use. It could discuss how the Colorado Department of Agriculture and Colorado State University Extension could help encourage agricultural conservation. In addition, the Plan suggests a substantially expanded role for the CWCB. As several of the proposed legislative action items suggest, the structure and authority of the CWCB may need to be revisited to make it more consistent with the objectives outlined in the Plan.

Water Banks - While the Colorado River Water Bank Working Group and the CWCB's support for this group are mentioned in the Plan (pages 196, 211-12), we recommend a specific action item continuing this support and eventual implementation of a Colorado River water bank to reduce the risk of a Compact deficit. We further recommend exploration of additional regional water banks created under CWCB guidelines to help facilitate more flexible response to drought situations and to manage the use of ATMs for the sharing of irrigation water.

Recommended Prioritization and Inclusion in Chapter 10 - As stated above, we believe that prioritization of the myriad proposed action items is essential. Our proposed prioritization and a listing of actions not currently included in Chapter 10 is set forth in the Attachment.

Thank you for the opportunity to submit these comments. We reiterate our support for the commitment in the Plan to find collaborative, balanced solutions to Colorado's water challenges.

Sincerely,

/s/

Lawrence J. MacDonnell
Getches-Wilkinson Center

/s/

Anne J. Castle
Getches-Wilkinson Center

[Executed signature page attached]

Sincerely,

Lawrence J. MacDonnell by AJC
Lawrence J. MacDonnell
Getches-Wilkinson Center

Anne J. Castle
Anne J. Castle
Getches-Wilkinson Center

ATTACHMENT

ACTION ITEMS THAT SHOULD BE DESIGNATED AS HIGH PRIORITY AND INCLUDED IN CHAPTER 10

Actions currently in Chapter 10

Funding: I.b.1, I.c.1 through I.c.6, II.d.2
Streamlining permitting: II.a.5
Storage: II.e.1, II.e.2
ATMs: II.c (but also include additional actions described below)
Conservation: III.a.2 (focus particularly on smaller municipal providers in high growth areas), III.a.3, III.a.4
Land Use: III.c.2
Agricultural viability: IV.a.3, IV.b.2 (combine with IV.a.4), IV.b.3, IV.b.5
Watershed Planning: V.c.1, V.c.3 (include CDPHE in these efforts)
Climate Change Resiliency and Compact compliance: VI.d.5, VI.e.2
Education: VII.1

Actions described in Chapters 6 - 9 but not currently in Chapter 10 that should be

Funding:
Pp. 157-58: The CWCB will establish guidelines for basin roundtable WSRA grants that will enable the basin roundtables to facilitate implementation of their BIPs in their basin. The purpose of the grants would be to foster meeting municipal, industrial, agricultural, environmental, and recreational needs in a manner consistent with the BIPs.
Pp. 172-73, action 10: Expand CWCB's loan ability to encompass conservation actions
Pp. 348-49, action 4, bullets 1, 3, 4:

ATMs:
P. 173, action 11: Support changes in state law or administration necessary to remove barriers to the use or sharing of conserved consumptive use water
P. 217, table 6.4-2: Implement IBCC recommended no- and low-regrets ATM actions
P. 217, action 3: Support appropriate fallowing-leasing pilot projects
P. 217, action 8: Work with basin roundtables through an ATM grant on a pilot program to facilitate water sharing agreements
Pp. 218-19, action 10, bullets 2, 3, 4, 7, and 8: Implement tools, reduce barriers, consider legislation, research benefits and challenges, explore 3rd party assistance

Conservation:

P. 173, action 12: Develop alternative process for smaller entities to create water conservation plans and report water use data to CWCB. CWCB to provide technical and financial support
P. 199, action 5: Explore additional incentives to assist basins in implementing, where appropriate, irrigation efficiency practices and changing crops type to a lower water use crop. These incentives should first be explored through conservation demonstration and pilot projects
Pp. 205-06, action 1: Examine the feasibility of water-energy nexus programs that conserve both water and energy
P. 206, action 10: Encourage technologies that reduce water use in energy extraction processes

Watershed Planning
P. 265, actions 4 and 5
P. 286-87, actions 1-7

Protecting Colorado's Compacts
P. 335, action E.1: CWCB to continue to support Colorado River water banking efforts and prioritize development of programmatic approach.

Storage
P. 349, action 4, bullet 14: Over the next year, continue to develop and fund a modern method to determine probable maximum precipitation for spillway sizing for dams in Colorado with the intent to provide additional storage while minimizing capital investment.

Streamlining permitting
P. 373, action 6: CWCB to work with state and federal partners to encourage cooperation through CAWS MOU process
Pp. 74, 114, 130, 349, 376:

Actions not explicitly described in Water Plan that we recommend be included in Chapter 10 and prioritized

Funding and Prioritization
Identification of general criteria that will be used to identify and prioritize projects and programs for funding. See discussion on pp. 2-3 above, and Plan discussion at pp. 337-38 and 368-69.

Land Use
The discussion of land use in the Water Plan is excellent, but there is not much meaningful action proposed. We recommend support for changes in state law to remove barriers integrating water and land use solutions, such as for gray water, green infrastructure, and green buildings. Action III.c.3 addresses this issue, but we

recommend commitment to removal of these barriers, not just examination of them. See also Action 5 on p. 180. We also recommend support for changes to state law to tie land use approvals to sustainable water availability, factoring in the impacts of Compact compliance and climate change. See discussion on p. 6 above. We endorse the recommendation of the South Platte and Metro Roundtables for further investigation of options for increased coordination between water utilities and land use planners to better plan for water-efficient growth (p. 187).

Conservation

Support legislation that recognizes the right of an agricultural water right owner to any conserved consumptive use, with implementing rules to be adopted by the Division of Water Resources. Similar legislation has been adopted in Montana, California, Oregon, and Washington. *See* Mont. Code Ann. Sec. 85-2-419; California Water Code Sec. 1011; Or. Rev. Stat. §§ 537.455-.500; Wash. Rev. Code Sec. 90.42.005 - .900.

Conceptual Framework

The discussion in the Water Plan is excellent, but we recommend that the CWCB explicitly support and adopt the conceptual framework and use it for determination of funding decisions. See discussion on p. 8 above.

Water Banks - See discussion on p. 9 above.

ATMs - Streamline approval processes and exempt certain ATMs from High Plains anti-speculation rule. See discussion on p. 7 above.

Future of IBCC and Basin Roundtables - See discussion on p. 4 above.

Direction to 2016 SWSI

Include analysis of the likely and potential impacts of warming on Colorado's water supply and demand and how the State should be proceeding to manage the associated adverse effects. See discussion on p. 4 above.

Integration of Water Quality and Water Quantity

Consider having the Governor establish a joint working group including CDPHE, CWCB, DWR, and CPW to identify challenges and opportunities for more deliberate integration.

PUBLIC INPUT ITEM 78

"Voice of the Western Slope since 1953"
A coalition of counties, communities, businesses & individuals

(970) 242-3264 ★ FAX (970) 245-8300
P.O. Box 550 ★ Grand Junction, CO 81502-0550
www.club20.org

September 15, 2015

Colorado Water Conservation Board
1313 Sherman St., Room 721
Denver, CO 80203

RE: Colorado Water Plan 2nd Draft, COMMENTS

Dear CWCB staff and Directors:

CLUB 20 respectfully submits the following comments regarding the second draft of the Colorado Water Plan. These comments reflect the work and beliefs of CLUB 20's Water Committee through its advisory committee and are consistent with CLUB 20 policies and priorities. We have focused our comments on a few of the principal policy areas of primary concern.

CLUB 20 extends our great appreciation for the countless hours dedicated to the development of the Colorado Water Plan by CWCB staff and the board. We also commend the CWCB for the considerable progress and improvement reflected in this second draft. We are therefore hopeful that the final copy delivered to the Governor this year will be a useful and constructive document after due consideration and incorporation of final comments.

While generally encouraged and hopeful regarding the progression of the drafts, we want to stress the nature of this document as a Plan. This is a Colorado Water Plan offering general direction, policy setting, and prioritization. It does not have statutory nor judicial authority. CLUB 20 believes an introductory statement early in document stating its standing, status and purpose would be beneficial to readers and future staff and board executing the Plan.

CLUB 20's roots are steeped in the trans-continental water divide. Our policies recognize the tenants of Colorado water law, specifically supporting the Prior Appropriation Doctrine as well as its corollary that water can be diverted from place of origin to place of beneficial use. However, our policies also recognize the unique benefits and impacts related to transmountain diversions (TMD) of Colorado's water and the absolute necessity for West Slope mitigation and local, basin-of-origin involvement in planning, design and mitigation plan development for any potential transmountain water project. Additionally, if protection of all of Colorado's irrigated agricultural is, in fact, at the heart of the Colorado Water Plan, the Plan and its "Conceptual Agreement" should expressly recognize the unique water quality impacts and requisite mitigation for possible future TMD.

The Plan should state a priority on water projects, both storage and demand management projects, that focus first on the basin of use as the primary source of supply. Only after full and efficient use of native supplies, could the West Slope begin discussions with other basins regarding acceptable terms and conditions for a possible new TMD.

CLUB 20 is particularly concerned with the prospect of over-development of the Colorado River basin and an allied compact call and its detrimental consequences on western Colorado and its economy. The Plan cannot stress strongly enough the need for proactive planning and action to ensure curtailment of Colorado River basin water uses never occurs in order to meet our obligations under the 1922 Compact. The Plan currently does not adequately prioritize nor commit the state to proactive and collaborative actions specifically targeted toward preventing a compact call for the Colorado River. Greater emphasis with specific goals and related timelines are required for this critical challenge in the final Plan.

Additionally, the Plan should emphasize the risks and uncertainty of yield from any Colorado River Project. These risks should be consistent with the state's Water Supply Investigation's conclusions and the clear implications of the first agreement in the Conceptual Framework. Several of the basin roundtables prioritized protection of existing uses in their evaluations of the basin's future. The state's Plan should do the same.

The Plan needs an evaluation of alternative water sources to a TMD. Conservation is critical but may not be adequate to fully meet the 2050 demand. If a TMD is the only option to ag dry up that is currently being considered in the CWP, given the first agreement in the Conceptual Framework, it is very possible that the supply of water from a TMD is not reliable and if alternatives are not investigated, ag dry up becomes the only option. Therefore CLUB 20 urges evaluation of alternative water sources to a TMD in the action items in Chapter 10 and elsewhere in the CWP.

If preserving existing ag uses to the maximum extent possible is truly the foundational premise of the Water Plan, then the Conceptual Framework must go beyond the principle that an entity developing additional water will "assume the hydrologic risk" of water availability. It must commit that existing water rights from the West Slope (and elsewhere) will not be condemned or otherwise forced to curtail or limit diversions or fallow ground, in order to assure yield for a TMD.

Finally, CLUB 20 wants to commend the IBCC for endorsing the "stretch goal" for municipal water conservation. This will be a challenge for all of Colorado, nevertheless a worthy goal. To achieve the stretch goal, the final Plan must include additional state resources committed to achieving this goal. Smaller communities, utilities and water districts will need financial and technical assistance in order to help achieve the statewide conservation goals. Development of model land use codes that reward Xeriscaping and reduced dependence on lawn grass should be included among the Actions in Chapter 10. As with other goals of the Plan, the municipal conservation goal must expressly recognize and prioritize the local control element of Colorado's municipal water supply.

CLUB 20 recognizes the on-going nature of any planning effort and the need for statewide collaboration to achieve the goals of the Colorado Water Plan. CLUB 20 is committed to remaining an active participant in the future refinement and implementation of the Plan post-gubernatorial adoption.

Sincerely,

Christian Reece
Executive Director

PUBLIC INPUT ITEM 79

First Name: Libby
Last Name: Comeaux
Affiliation:
Email: libby.comeaux@gmail.com
Phone (Example: 000-000-0000): 720-379-7864
Cell Phone (Example: 000-000-0000): 720-320-8723
River Basin: South Platte
Constituent Group: General Public
Comments to be considered in Colorado's Water Plan:
Good effort on such a complex task. One glaring oversight, I think, needs to be addressed and the plan revised.

1. General Principles: This should be a plan for the future, not the past. The key criterion must be that we STOP doing things that perpetuate or worsen the climate crisis, and START doing things that alleviate it. We are in the midst of a largely human-caused EMERGENCY in which CLIMATE CHANGE impacts everything WATER. The definition of "beneficial use" must change to meet the current multi-dimensional crisis of all earth systems, of which the climate crisis is a useful signal for our purposes here. Other legal doctrines will have to change too; please add them to the plan. Simple rule: if a use of water contributes to the cause of the climate crisis, stop allowing it – phase it out completely in a maximum of five years. Prioritize the uses that address the crisis.

2. This 2d draft of the plan limits us to water planning that only mitigates or adapts to climate change as though there is nothing we can do to STOP CAUSING IT. We cannot merely "prepare for climate change;" we need a water plan that helps us ACTIVELY STOP CAUSING CLIMATE CHANGE. The following examples will not surprise anyone; we just have to make ourselves face and do this!

a. SET ASIDE and prioritize industrial / manufacturing-use water – regardless of who owns the rights - for manufacturing to expedite the rapid transition, in the next 5 years, to 100% renewables (solar, wind, possibly geothermal and a small amount of hydro – no nuclear, no fossil fuels) for all power needs across all spectra. (This is possible, for example, see Stanford Professor Mark Jacobson's plan published in Scientific American in 2009.)

b. STOP allowing water that enters this state (through any means) from being used in any way that promotes or allows the burning of fossil fuels. Establish this goal and a plan to reach the goal within 5 years. Reconsider this policy after the climate crisis is over.

c. Make all data regarding water use publicly available and understandable for the purpose of citizens being able to monitor how quickly and effectively we are changing our use of water from causing the climate-crisis to stopping the human causes of climate change. STOP allowing any water to be permanently ruined and sealed away forever miles below the ground!

d. STOP all hard-rock mining usage of water until (1) there is a fail-safe means of keeping toxic byproducts in the mountain and not in any of the water, and (2) before any further extraction activity, the mining company has provided a fail-safe surety by which the mining company internalizes and finances all safety, cleanup, and environmental costs forever. BEGIN recycling existing fossil fuel and other mining products for reuse, to replace the need for new mining for products necessary for medical and sustainable manufacturing purposes.

e. BEGIN prioritizing agricultural-use water for growing crops that most efficiently feed the most local people, through farming methods that renew rather than deplete the mass and health of the soil, while strengthening the capacity of the soil to retain moisture.

f. REDUCE agricultural water usages that add significant methane emissions which are among the most extreme causes of climate change.

PUBLIC INPUT ITEM 83

COLORADO CATTLEMEN'S ASSOCIATION
"Representing the interests of Colorado's beef industry since 1867"

September 16, 2015

Mr. James Eklund
Executive Director
Colorado Water Conservation Board
1313 Sherman St., Room 718
Denver, CO 80203

Dear Director Eklund:

The Colorado Cattlemen's Association is pleased to offer the following comments related to the draft Colorado Water Plan (CWP). CCA appreciates the effort, outreach and feedback that have gone into the CWP, and looks forward to ongoing engagement and refinement of this important topic and process.

The Colorado Cattlemen's Association (CCA), founded in 1867, represents the interests of Colorado's ranching, feedlot and associated businesses in Colorado. CCA member families possess water rights from the most senior to those recently adjudicated. Members utilize surface water and groundwater to produce a variety of agricultural, environmental, recreational and public attributes. Without adequate irrigation and livestock water, Colorado's environment, economy and society will assuredly be imperiled.

CCA supports the focus in the CWP on the need to sustain irrigated agriculture. CCA suggests that this focus continues and manifests itself into an actionable plan with adequate resources being allocated toward outreach, research and water projects. Furthermore, CCA supports the inclusion of the following statement in the Plan:

> *The majority of water diverted in Colorado is used to grow our food. Without planned interventions, the path we are on is drying up vast areas of irrigated lands. Colorado's farmers and ranchers contribute $41 billion to the state economy and employ nearly 173,000 people, providing local food and energy; as well as over $1 billion annually in international exports sustaining Colorado's economy. In addition, the value of Colorado's diverse agriculture is much more than purely economic, it's also about communities and the "public good" associated with aspects of a vibrant agricultural sector. Private working lands provide the majority of wildlife habitat and open spaces that offset some of the unwanted aspects of urban growth such as sprawl, traffic congestion, noise, habitat loss and air pollution. The stewards of the land on more than 37,000 farms and ranches care for 31.6 million acres, almost half of Colorado's land area. As we lose irrigated agriculture, we are losing our heritage, our rural communities; and we are losing water that travels through our rivers to downstream farms, providing recreational flows, as well as environmental*

amenities such as wetlands and aquatic habitat."

- The CWP has a monolithic feel toward ATM's versus a broader sense of other methods and innovative approaches for sustaining agriculture water use. CCA supports a much broader approach to include, but not limited to, the following:

    - Conservation easements on lands that secure the water for lease arrangements. (Upon initial dialogue, CCA members do not support easing water alone, but rather the land and water as a unit with the opportunity to lease. CCA members are currently refining our policy on the topic.)
    - Developing ways to incentivize water staying in agriculture, in addition to developing alternative methods for transfer.
    - Explore and implement irrigation, conveyance and other efficiencies within the system and in the use of water.
    - Upgrading irrigation and diversion systems.
    - Providing adequate staff resources.
    - Developing strategies to remove or minimize the numerous disincentives that are causing the loss of farms and ranches in Colorado.
    - Lead by example. Colorado needs to experiment and expand its consideration of projects and approaches that deliver desired results.

- Conservation, while a laudable and critical practice related to water use, is not appropriate to apply equally across all water users. CCA supports a dimensional analysis of all conservation strategies, previous to implementation, in order to consider the intended and unintended consequences. In short, CCA prefers efficiency implementations in agriculture versus traditional conservation applications. Our primary reasoning is that conservation will limit agriculture production and associated amenities.

    - CCA supports looking at a stronger municipal conservation strategy for Colorado to include stronger criteria for new developments, household-by-household prescriptive conservation measures, etc.
    - CCA supports in-field (actually in the irrigated crop field) efficiencies for water delivery and administration but sees little if any ability for conservation. This observation is based on Colorado Water Law and the engineering practicality of how water moves. In other words, Agriculture's conserved water is not conserved but becomes another water right holders consumptive water.
    - To actually conserve water…water has to be not utilized. Agriculture has aggressively engaged in conserving/using less "process" water throughout our value chain to include washing, conveyance, dust control, evaporation, leaks, etc. These facts are well documents and listed at the end of these comments.
    - CCA opposes, stridently, any mandatory limitations/conservation of agriculture irrigation water.
    - CCA supports efficiencies focused on infrastructure improvement, cropping strategies, engineering of water application. CCA also believes other industries should evaluate their efficiency mechanisms in conjunction with their supply chains.

CCA also supports evaluating and implementing criteria whereby efficiencies can cause harm to other water users.

- CCA requests enhanced engagement throughout the generations of water users. Water knowledge and engagement should not be a "water buffalo" only society. Engagement of the next generations of agriculture producers should be a focus of stakeholders and the state. For instance, CCA has programs such as the Ranching Legacy Program and its corresponding leadership track that offer the perfect entre to this audience.

- CCA is concerned about increasing rigidity and inconsistent enforcement from the state engineer's office. Examples are available, but these comments are not an appropriate venue. CCA recommends a comprehensive review and potential oversight in these areas that delivers consistent and CWP-aligned outcomes.

- CCA is concerned about water loss in the system, be it leaking reservoirs and conveyances or municipal infrastructure. A high degree of attention and resources needs to be allocated and swift remedies implemented.

- CWP is overly focused on Alternative Ag Transfer Methods, which in fact will also result in reduced irrigated acres. While we support this work, it is only a fraction of what needs to be accomplished to implement the goals of the Water Plan. We propose a statutory revamping of CWCB's current ATM program to include the ATM program as well as other methods and innovations to keep, develop and conserve Ag water.

    - Fallowing as a last resort. Use other ATM's as a higher priority driven by funding. Need to analyze which are least impactful to irrigated agriculture through decreased production and dry-up.
    - Develop a decision tool to determine which ATM's are used and for what purpose.
    - Consider ATM caps per basin.

- CCA endorses outreach and education plans but believes a proportional focus on these efforts be associated with agriculture irrigation water to look inward related to producer education and outward to the public at-large.

- Of the highest priority, CCA calls upon state leadership to prioritize state support for new multi-use storage projects (new surface reservoirs, refurbished existing storage, and aquifer storage) that include dedicated agricultural water storage. CCA endorses the investigation of regional partnerships to look at all possible sources of water from out of state to meet the gap and recommends that the CWP call for continued investigation of interstate water augmentation opportunities.

- CCA streamlining of federal and state permitting processes for new and renovated infrastructure projects. Additionally, CCA calls on the state to work with the Western Governors, Colorado Water Congress, and Colorado Ag Water Alliance member

organizations that are dedicated to the reduction of unnecessary federal, state and local permitting roadblocks.

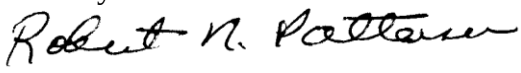
- The system today, of Water Court and administrative procedures can and should be cost effective related to the desired outcome not cost prohibitive as a strategy for some to outspend/outlast their opponent in order to secure their way to a win. CCA request a strategic review and modification of these systems to curtail this strategy.

- CCA has strong concerns over the level of detail and strategic consideration that Chapter 10, the Critical Action Plan. CCA suggest that this chapter be contextually reviewed for its lack of interpretative clarity. While an important subject area, we do not see this chapter being of the caliber that other chapters are. One could ascertain from the chapter that irrigated agriculture needs greater funding and a curtailment of ag transfers are a high priority. On the other hand, you could also interpret that resources should be allocated to moving water the highest and best uses to meet future demands in light of a changing climate equating into ag dry up.

  Due to the lack of priorities, timelines and mechanisms for completion, CCA recommends that this section remain draft and become part of the dialogue around the CWP's implementation strategy rather than an element of the finalized plan.

In closing, CCA recognizes and appreciates the hours, dollars and sacrifice that have gone into the development of the draft Colorado Water Plan. Water is the very backbone of Colorado, and must be addressed in a sustainable (economy, environment and society) fashion. Thank you for considering these comments and please call upon our organization for further engagement in this endeavor.

Sincerely



Bob Patterson
President

Appendices
CCA requests that the following documents be entered into the record as official supporting materials related to above comments. Due to document length, the following links have been provided.

Does Beef Really Use That Much Water
http://www.beefresearch.org/cmdocs/beefresearch/sustainability_factsheet_topicbriefs/fact%20sheet%202-water.pdf

Beef Life Cycle Assessment (Accounts for other commodity water savings also)
http://issuu.com/beefcheckoff/docs/sustainabilityexecutivesummaryweb?e=8298940/6720608

PUBLIC INPUT ITEM 86

TRI-STATE GENERATION AND TRANSMISSION ASSOCIATION, INC.
HEADQUARTERS: P.O. BOX 33695 DENVER, COLORADO 80233-0695 303-452-6111

September 15, 2015

VIA COLORADO'S WATER PLAN GENERAL INPUT WEBSITE

James Eklund, Esq.
Director, Colorado Water Conservation Board
1313 Sherman Street, Room 721
Denver, CO 80203

RE: Tri-State Generation and Transmission Association, Inc. Comments – Second Draft of the State Water Plan

Dear Mr. Eklund:

Tri-State Generation and Transmission Association, Inc. ("Tri-State") transmits this letter to provide comments on the second draft of the State Water Plan ("Plan"). On April 28, 2015, Tri-State provided comments on the First Draft and incorporates those comments into this letter.

Tri-State is a not-for-profit, wholesale electric power supply cooperative providing power to 44 member distribution systems serving customers throughout 250,000 square miles in Colorado, Nebraska, New Mexico, and Wyoming. Tri-State provides electricity to members based on a diverse mix of generation sources including coal, natural gas, hydroelectric, solar and wind power. Tri-State has water rights in five of the seven water basins in Colorado.

We would like to thank the Colorado Water Conservation Board's ("CWCB") Staff for diligently considering Tri-State's comments during the drafting of the State Water Plan. Tri-State has participated in the development of the Yampa-White-Green Basin Implementation Plan, monitored other Basin Implementation Plans and attended numerous meetings on the State Water Plan including the Statewide Basin Roundtable Summits. Tri-State offered comments on Section 6.3.5 in the drafting process and after the release of the First Draft.

Comment One: As noted in the State Water Plan, thermoelectric power generation uses a very small portion, no more than one percent of the State's water.

Tri-State is proud of its commitment to sustainable water supplies and works closely with other water users in various Basins to ensure flexibility and certainty in water supply deliveries. In the Yampa River, we have worked closely with the Colorado Water Trust, Upper Yampa Water Conservancy District and the Routt County Conservation District to implement agreements and projects which positively impact the water shed and water availability.

Comment Two: Actions listed for the Self-Supplied Energy Sector in Chapter 6 must avoid recommendations which conflict with existing authority of various federal and state agencies.

Tri-State restates our concern that Action Nos. 7, 8, and 9 may conflict with Colorado laws, Public Utilities Commission resource planning obligations and the authority of various federal agencies, including Federal Energy Regulatory Commission, North American Electric Reliability Corporation and the Environmental Protection Agency. At the very least, Tri-State requests that the Plan explicitly recognize that these Actions conflict with the authority of various federal and state agencies. Tri-State would welcome the opportunity to work with CWCB Staff on these Actions.

Comment Three: The State Water Plan and its Actions must recognize private property rights.

We applaud CWCB's commitment to making sure the Plan does not conflict with the doctrine of prior appropriation. As CWCB explores how to create "flexibility" into the existing water system, great care to prevent injury to both senior and junior water rights holders must be taken. Also, the Plan should emphasize that water rights are private property rights and may be used by the user in the manner provided by the water rights' decree.

Comment Four: The State Water Plan and its Actions must recognize regional differences.

As reflected in the individual Basin Implementation Plans, each basin is unique in the challenges and opportunities that exist to meeting the State's water needs. Wide-sweeping Actions may have different and sometimes unintended consequences depending upon the Basin in which it is implemented. Also, we ask that CWCB recognize that planning decisions concerning electric generation infrastructure and resource selection could differ significantly between urban or high population density areas and rural communities.

Comment Five: The State Water Plan's potential funding sources for water infrastructure needs must not unfairly burden rural Coloradans.

Chapter 9.2 discusses the "true cost" of water and possible funding mechanisms for water infrastructure needs. In this discussion, the Plan calls for severance tax increases and the removal of Federal mineral lease and severance tax fund cap limits as methods to pay for the projects supported in the Plan. Tri-State has grave concerns regarding any severance tax increases. Increases in severance taxes would result in increased electricity costs to consumers and would unfairly burden rural Coloradans who would fund water projects that are primarily for the benefit of the Front Range. Furthermore, the severance tax base will continue to shrink over time as electricity providers include more renewables. Tri-State strongly recommends that references to increases in severance tax and the removal of severance tax fund cap limits should be stricken from the Plan.

Also, in Chapter 9.2, as part of the Plan's discussion of the true cost of water, the Plan asserts that water is more capital-intensive than other public utilities including electricity. We disagree with this assertion. More importantly, we fail to understand the value of comparing one public utility's capital needs against others. All public utilities require significant capital investment and the range of such investment varies significantly depending on the scope of the project. We hope the CWCB will rework this discussion.

Thank you for the opportunity to provide comments. If you have any questions about these comments, please contact me at (303) 254-3208.

Sincerely,

Michael G. Sorensen

Michael G. Sorensen
Senior Manager, Fuel and Water Resources

MGS:ks

PUBLIC INPUT ITEM 89

September 16, 2015

Rebecca Mitchell
Chief, Water Supply and Planning Section
Colorado Water Conservation Board
1313 Sherman Street, Room 721
Denver, CO 80202

Re: Comments on Second Draft of the Colorado Water Plan

Dear Ms. Mitchell:

The Green Industries of Colorado (GreenCO) has reviewed the second draft of the Colorado Water Plan, and we applaud CWCB and Governor Hickenlooper for continuing to frame the discussion in a way that recognizes and calls for a sustainable future without sacrificing quality of life in Colorado. This letter has two purposes: 1) to comment on the outdoor water conservation action items in chapter 6.3 and other references on outdoor water use throughout the plan and 2) to update you on the findings of the GreenCO landscape water conservation best management practices (BMP) quantification study, which has been conducted concurrently to development of the Second Draft of the Water Plan.

GreenCO is committed to water conservation and water quality protection as a sustainable business model, and we are both a stakeholder and partner to help promote water conservation and water quality. We have long recognized the valuable opportunity that exists for partnerships between CWCB, water utilities and GreenCO, and we deeply appreciate CWCB's longtime support of the development and revisions of the GreenCO BMPs as well as CWCB's inclusion of the BMPs in various state water initiatives, such as the CWCB Water Conservation Integration Plan, the Colorado WaterWise Guidebook for Municipal Conservation and SWSI 2. The BMPs have also been included in three state laws: HB 10-1358, SB 13-183, and SB 14-017.

1. General Comments on Second Draft of the Colorado Water Plan

We are pleased that CWCB and Governor Hickenlooper recognize that a multi-faceted strategy is needed to meet the projected water gap that may exceed 500,000 acre-feet (AF). Urban landscape water conservation is certainly part of the solution. We also appreciate CWCB's recognition of a robust process for demand reduction outlined in chapter 6. The five elements of this process – and its vision and implementation -- parallel GreenCO's organizational values.

The Second Draft also notes the importance of both water quality protection and water conservation. GreenCO's BMPs recognize that water quality and quantity go hand-in-hand. For example, BMPs that reduce over-irrigation also reduce the transport of pollutant loads to the storm sewer system. Additionally, pervious landscape areas are a key component of reducing runoff volumes associated with urban stormwater runoff, helping to reduce pollutant loads through infiltration of runoff, interception by tree canopy, and uptake of pollutants by vegetation. Trees, turf and landscape plants mitigate urban heat island effects by shading hot pavement and reducing energy consumption in buildings. A turfgrass lawn will be 15 degrees cooler than bare soil and 30 degrees cooler than pavement or rock. These benefits will be increasingly important due to climate change.

We are also pleased to see a vision for productive legislation regarding outdoor water use. GreenCO has long believed that Colorado needs thoughtful long-term policy that incentivizes conservation and utilizes a water budgeting approach to manage and balance water demands, while allowing flexibility in landscape designs. Water budgeting, combined with increasing block rate structures, moves beyond "cash for grass" programs, recognizing that landscape design, installation and maintenance practices are important components for successful long-term landscape water conservation. Water budgeting amounts to a significant water savings versus a perceived water savings. In addition to water budgeting, there are ample opportunities for landscape water conservation incentives, which influence behavioral changes, as noted in the Second Draft.

We join other business groups in encouraging expanded water reuse throughout the state for agricultural, industrial, and municipal use. State and local policies and regulations should continue to reduce barriers to and encourage the use of reclaimed water and gray water for landscape irrigation, as well as other uses. (This also includes rainwater harvesting.)

River compacts are extremely complicated and in many cases were based on apportioning water at levels that are no longer flowing in our rivers. This challenge requires thoughtful discussion and collaboration among western states. Water storage is critical to make sure Colorado fully utilizes water legally available for use in the state. Several projects in planning stages could help us capture water in wet years to use in dry ones. Additional storage could help mitigate long-term problems caused by drought and expected from climate change and should be a policy priority.

In addition to the big-picture comments provided above, we have two suggestions for improving the clarity of the Plan:

1. **Provide clearer summaries of quantitative data and associated assumptions.** The various projected water gaps, potential savings targets and expected savings from various projects discussed in the plan are difficult to follow. Better explanation of each estimate is needed in the text, or perhaps in a master table that better relates the various gaps and savings estimates such as those presented in Table 5-1 and Table 6.2-2. Additionally, targets of 170,000 AF to 200,000 AF of savings are used in various locations in the report, but without clear explanation of how these values are derived from the various tables. Would it be feasible to add one additional table that more clearly summarizes the various volume estimates in the report and clearly states assumptions that were used to derive these estimates? For example, it would be helpful to include a table that lists each basin, the 2050 gap, the portion of the gap expected to

be filled through planned projects, the gap to be filled through passive conservation savings, and the remaining gap to be filled by active conservation (or other methods). If possible, it would also be useful if columns quantifying savings estimates using categories in Table 5-2 could be included so that active savings targeted among residential (indoor), non-residential, landscape and utility losses are shown in the same table with the water gaps. From GreenCO's perspective, this would provide a clearer understanding of the range of water savings targeted for urban landscapes.

2. **Refinements in terminology regarding landscape-related savings.** There are multiple locations in the Plan where landscape-related terminology could be improved. For example, one of the actions in Chapter 6 references CWCB providing grants and technical support to state agencies for the replacement of turfgrass with plants that "use less water." GreenCO suggests that the language be tightened in multiple locations in the plan to use the phrase "plants with lower water requirements" and to additionally recognize the role that landscape management plays in water conservation. Any plant type can be overwatered or watered inefficiently—GreenCO's view is that all landscapes need to be managed efficiently, according to the needs of the plants. Similarly, the phrase "efficient landscape" is also a misnomer because the opportunities for efficiency include management, not just the landscape type. Opportunities for landscape water conservation include both landscape characteristics with lower water requirements and efficient irrigation designs/installations and water-efficient irrigation management. In essence, the design, installation and management are the components incorporated into Xeriscape, which is also emphasized in GreenCO's BMPs. Additionally, we are surprised that the term Xeriscape is only mentioned on two pages in the Water Plan (p. 173 and p. 176). GreenCO strongly supports the holistic concept of Xeriscape, which was a term originally coined by Denver Water. Xeriscape addresses each step of the landscape cycle from first design all the way through to how the site is maintained in perpetuity. Xeriscape addresses the landscape holistically instead of as menu of choices because <u>all</u> of these steps are important for reducing demand for urban landscape irrigation, while maintaining attractive, sustainable landscapes that enhance quality of life in Colorado. Demand reduction for urban landscapes will not be achieved by simply "changing plants", but also by changing behavior to irrigate landscapes according to plant water requirements. We recommend that Xeriscape be a key foundation in the Water Plan as an important foundation for outdoor water use and conservation.

The Seven Principles of Xeriscape

1. Planning and Design
2. Soil Improvements
3. Efficient Irrigation
4. Plant Zones
5. Mulching
6. Practical Turf Areas
7. Maintenance

2. Chapter 6.3: Conservation and Reuse

In our February 27 comments on the First Draft of the Plan, we identified eight items where GreenCO's strategic initiatives align with the 13 action items in the Conservation and Reuse chapter. While the language in the Second Draft is more generalized than the language in the First Draft, we continue to see alignment as follows:

- **Support foundational activities for all water providers.** As stated above, GreenCO is a long-time advocate of water budgeting, which is a primary practice included in its BMP manual and on-line tools (e.g., water budget calculator). Water budgeting provides an equitable allocation of water for both indoor and outdoor use, a strategy to allocate water based on the conditions in the landscape, and can be used by local governments to design rate structures. Smart metering, which provides consumers real-time consumption data, is another practice the industry fully supports; as technology improves with metering, better informed, conservation-oriented water use decisions can be made in homes and businesses. (Denver Water is making significant progress in their smart meter pilots). Additionally, improved data sets obtained through advanced metering (separating indoor and outdoor) can be used to refine demand for both indoor and outdoor water use.

- **WaterSense specifications for outdoor technology.** GreenCO supports WaterSense labelling and has discussed potential legislation with Denver Water and our national sister associations. Currently, there is only one WaterSense labelled irrigation component (irrigation controllers) available, and there should be more irrigation system components and technologies endorsed by WaterSense before any legislation is adopted. We are, however, committed to engaging in these talks to help improve irrigation efficiency.

- **Explore incentives for outdoor water conservation measures.** We support incentivizing both residential and commercial property owners to help offset the cost of renovating existing landscapes and upgrading the irrigation systems and technology. Proper landscape design, appropriate plant selection, efficient irrigation design and installation and proper ongoing maintenance are crucial for the sustainability of Colorado's built landscape. Again, GreenCO can help identify which incentives will reap the most water savings and where utilities can direct their rebate programs to realize a better return on investment. We have several case studies on incentive partnerships between Denver Water, property owners and landscape companies that provided both significant financial and water savings.

- **Water conservation education and outreach.** It's imperative to continue to educate the public on the value of water and how to reduce both indoor and outdoor use. GreenCO's new report (see attached Executive Summary) identifies key opportunities for landscape water conservation, along with estimates of the relative benefits of selected practices. In addition to guidance for routine water conservation, educational efforts should also include guidance during drought conditions, so that trees, plants and valuable landscapes survive these conditions. GreenCO's BMPs provide guidance on both everyday water conservation practices, as well as drought practices.

- **Evaluation of barriers to green building and infrastructure.** As noted above, we are strongly in favor of water reuse, green infrastructure and other sustainable development approaches. For example, we collaborated with the Home Builders Association to develop a landscape checklist for its Built Green program. Additionally, GreenCO's BMPs were significantly utilized in developing the source control BMPs in the Urban Drainage and Flood Control District's Urban Storm Drainage Criteria Manual, Volume 3, which is utilized by communities throughout the Front Range. The first step in effective urban stormwater management is to reduce runoff

volumes by minimizing directly connected impervious areas—urban landscapes provide pervious areas that can help to disconnect impervious surfaces and allow rainfall to infiltrate, rather than flow directly to storm sewers.

- **Strengthen Partnerships.** GreenCO's established partnership with CWCB can continue as we work together on conservation incentives, continuing technical education on water management for the industry, outreach and education of the public as noted previously, and on sound water policy to help meet projected water shortages. We envision further collaboration between the basins, the state and the industry. With regard to training and education within the Green Industry, we encourage CWCB to first consider existing certification and training programs developed from within the industry—leveraging these programs, rather than duplicating work already done or embarking on independent efforts. We would like to review the various training programs offered through GreenCO, ALCC, the Irrigation Association, Colorado State University Extension, and others with CWCB staff. We extend an invitation for CWCB staff to be our guest ProGreen EXPO, our industry wide conference to be held February, 2016.

- **Support local water smart ordinances:** Over the next two years, the CWCB will provide trainings that support local regulatory efforts that guide water-related aspects of new construction, both indoor and outdoor, to accomplish local water conservation goals. While new construction is certainly a target, GreenCO believes that increased water conservation and irrigation efficiency for existing landscapes is a key component of closing the water gap. New and continued incentives are needed for retrofitting existing landscapes. As you are aware, GreenCO has proposed the development of a model ordinance based on BMP data and standards that will increase outdoor water conservation, and we look forward to continue working with CWCB on the ordinance. A framework of consistent water-related landscape standards needs to be put into place and enforced for true savings to be realized.

- **Data and tracking.** GreenCO continues to believe that consistent water data collection and tracking of water uses through improved metering are needed to improve demand projections in Colorado. Although House Bill 10-1051 is a step in the right direction, additional work is needed in this area to promote more consistent reporting of both water use and metadata so that these data sets can be analyzed to support improved decision-making. This information should be publically available.

3. Exploring the Role of Landscape Water Conservation and Efficiency in Meeting the Colorado Water Gap: Expected Benefits of Landscape Water Conservation Best Management Practices (GreenCO's 2015 Quantification Study)

While most agree that landscape water conservation opportunities are plentiful, the magnitude of achievable savings is not currently quantified in a manner that is consistently transferable or readily integrated into local watering guidelines, rules and regulations, water conservation plans, Basin Implementation Plans, the state water plan or various state legislative initiatives.

To help convey the quantitative benefits of landscape BMPs, both within the industry and for water providers, GreenCO has undertaken two efforts to identify and synthesize data useful for quantifying water savings for landscape BMPs. The first effort included a landscape water conservation literature review in 2009, which was funded by the Colorado Water Conservation Board. Because water savings in the literature were reported using a variety of methods and varying levels of site-related characteristics (metadata), additional work was recommended to "normalize" these data sets for purposes of developing quantitative savings estimates. In 2015, GreenCO undertook a second effort to further quantify the benefits of landscape water conservation practices that incorporated normalized water savings from the literature, engineering calculations to quantify the relative benefits of specific practices, and a demand model applied at the basin scale (using the South Platte Basin as an example). An Executive Summary of this report is attached, summarizing key findings and providing a series of recommendations for policy makers. We look forward to discussing the findings and recommendations from this report with your further.

We look forward to working with CWCB on how to ensure we have an adequate water supply for future generations in a manner that keeps the urban landscape healthy. Our industry plays a critical role in the state's economy and the work we do enhances the environment, citizens' quality of life, property values and overall enjoyment. We appreciate partnering with you on our state's most precious natural resource.

Sincerely,

Kristen Fefes

Kristen S. Fefes, CAE
Executive Team Member, GreenCO
Executive Director & CEO, Associated Landscape Contractors of Colorado

cc: GreenCO Board of Directors
GreenCO member associations
ASLA Colorado
Associated Landscape Contractors of Colorado
Colorado Arborists and Lawn Care Professionals
Colorado Nursery and Greenhouse Association
Garden Centers of Colorado
International Society of Arboriculture, Rocky Mountain Chapter
Rocky Mountain Sod Growers Association
Brenda O'Brien, GreenCO Water Project Manager
Jane Clary, Wright Water Engineers

Exploring the Role of Landscape Water Conservation and Efficiency in Meeting the Colorado Water Gap: Expected Benefits of Landscape Water Conservation Best Management Practices

Prepared for GreenCO by Wright Water Engineers, Northern Colorado Water Conservancy District and Aquacraft Engineering, September 2015

Executive Summary

Colorado is facing a projected water supply gap that may exceed 500,000 acre-feet (AF) by 2050. A multi-faceted strategy is needed to meet to this gap, and urban landscape water conservation is part of the solution. From 2002-2008, GreenCO worked to develop a scientifically-based set of 39 best management practices (BMPs) for the Green Industry, summarizing practices that conserve (require less) water, increase irrigation efficiency, protect water quality, and support healthy, sustainable landscapes. Represented examples of these BMPs include: Xeriscape, water budgeting, soil amendment/ground preparation, various irrigation efficiency practices (e.g., design, installation, maintenance, technology), and landscape design and maintenance practices. While most agree that landscape water conservation opportunities are plentiful in urban landscapes, the magnitude of water savings achievable through various BMPs is not currently quantified in a manner that is consistently transferable or readily integrated into local watering guidelines, rules and regulations, Water Conservation Plans, Basin Implementation Plans, the State Water Plan, or various legislative House and Senate Bill initiatives.

To help convey the quantitative benefits of landscape BMPs, both within the industry and for water providers, GreenCO has undertaken two efforts to identify and synthesize data useful for quantifying water savings for BMPs. The first effort included a landscape water conservation literature review in 2009, which was funded by the Colorado Water Conservation Board. Because water savings in the literature were reported using a variety of methods and varying levels of site-related characteristics (metadata), additional work was recommended to "normalize" these data sets (i.e., translate to a common metric) for purposes of developing quantitative savings estimates. In 2015, GreenCO undertook a second effort to extract key data from the 2009 literature review studies and review additional literature to better quantify the benefits of landscape water conservation BMPs, as summarized in this report.

The original intent of this effort was to extract new landscape water conservation savings from the literature and normalize the varied findings reported in the literature to support quantitative estimates for various landscape BMPs. One of the challenges associated with interpretation and synthesis of landscape water conservation studies conducted for multiple purposes in various geographic locations and hydrologic conditions (e.g., wet year, dry year) is that the measures of performance are often not directly transferable. For example, a 50% savings of water during a wet year on the Front Range would overestimate the savings that would be expected during a

dry year on the West Slope. In order to increase the transferability and comparability of study findings, additional steps must be taken to normalize study findings. Although such techniques to normalize data are available, adequate metadata (information about the study conditions) are needed to accomplish this task. Because the literature review indicated that limited empirical data were available, an expanded multipronged approach was developed to further the understanding of the potential water savings associated with various BMPs and to develop a better understanding of the role of landscape water conservation BMPs in meeting the state's water gap. These three complementary approaches were used:

1. Compile and normalize the findings of existing empirical data in the literature.

2. Complete engineering calculations to estimate net irrigation requirements for various landscape scenarios using a spreadsheet tool based on the Dual Kc Method described in the Food and Agricultural Organization Handbook 56 (FAO 56). This analysis was used to better quantify how landscape water needs change as BMP-related variables such as plant type, irrigation method and soil characteristics are altered.

3. Conduct macro-scale modeling for the South Platte Basin to estimate potential water demand reductions achievable under several outdoor water use scenarios. This effort was conducted by Aquacraft Engineering, utilizing an approach similar to the one used in the Water Research Foundation-sponsored Water Residential End Uses of Water Study 2 (REUWS2).

Although each of these exercises was primarily oriented to Front Range settings, similar exercises could be conducted for other basins in Colorado. All three of these exercises could continue to be refined based on new data, or other hypothetical scenarios.

Summary of Findings

As a result of the expanded literature review and modeling efforts, key findings supported by the analysis in this report include:

1. Both empirical data and modeling efforts demonstrate that landscape water conservation BMPs can provide significant water demand reductions, without sacrificing attractive, sustainable landscapes. The absolute magnitude of these reductions varies based on site-specific landscape conditions, climate and behavioral change. The primary practices evaluated in this report relate to Xeriscape, including (but not limited to) plant selection, irrigation practice and technology, soil amendment (to a limited extent), and improvements to irrigation systems in response to irrigation audits.

2. Simply reducing over-irrigation remains a significant opportunity for water savings. This practice can be implemented without costly retrofits of landscapes, although upgrades to irrigation systems and use of advanced irrigation technology will certainly support this objective. Water budgeting is a fundamental tool that can be used to educate property owners and landscape contractors about the irrigation requirements needed to maintain

healthy landscapes. When targeting reduction in over-irrigation, recent studies by Denver Water and others show that many service areas include multiple irrigation user types: those who under-irrigate, those who practice sustainable irrigation practices and those who over-irrigate. Efforts to reduce over-irrigation and planning-level reduction targets should be targeted to the subset of customers who are over-irrigating. Modeling conducted by Aquacraft for this report shows that reducing over-irrigation by 20% for single family residential units and 10% for multi-family residential units could save nearly 86,560 AF of water in the South Platte Basin over a 40-year period.

3. Based on the expanded literature review, study characteristics and water savings data were extracted and compiled in a consistent format to facilitate normalization of expected water savings for various landscape BMPs. The lack of consistency in reporting of data in the literature significantly constrained this exercise. Nonetheless, quantitative ranges of savings in gallons per square foot (gpsf) were calculated for the Front Range for the following general practice groups:

    a. Conversion of Cool-Season Turf (e.g. Kentucky bluegrass) to Plants with Lower Irrigation Requirements: Converting cool-season turf areas to shrubs, ground covers and perennials is estimated to save 2.0 to 5.5 gpsf of landscape area. These savings increase to 5.9-11.5 gpsf if the replacement is with low-water xeric plants. Portions of lawns where such conversions may be particularly beneficial include steep slopes, narrow strips that are difficult to irrigate, and other areas where cool-season turf is difficult to efficiently maintain or is not providing aesthetic or functional benefits.

    b. Irrigation Efficiency Audits: Performing irrigation efficiency audits is estimated to save 1.3 to 3.3 gpsf when irrigation efficiency is improved in response to irrigation audits.

    c. Irrigation System Technology and Retrofits: Study designs vary substantially, making generalizations difficult. Examples of reported savings include 4.8 gpsf for replacing old irrigation systems and 3.3 gpsf for weather based irrigation controllers. Some studies have shown increases in irrigation use when manual watering is converted to automated irrigation or when advanced weather-based controllers are implemented. (In such cases, the baseline landscape conditions represent under-watering and the irrigation level is raised to meet the irrigation requirement of the plants.)

    Estimates were also calculated for Grand Junction, with the magnitude of savings (gpsf) generally greater on the West Slope due to higher ET (evapotranspiration) rates and lower precipitation.

4. A spreadsheet model (based on the Dual Kc Method described in FAO 56) was used to calculate the net irrigation requirements of various landscape scenarios, with results

compared to two irrigated cool-season turf landscape scenarios. Key findings from this modeling exercise included:

a. The lowest overall irrigation requirement achieved was for deep-rooted xeric plants, irrigated infrequently using drip irrigation, followed by more shallow rooted xeric ground covers. The ground cover scenario represents approximately 50 to 60 percent savings relative to the baseline turf scenarios. Deep-rooted xeric plants provided an additional 10 percent reduction in water requirement relative to more shallow rooted (6 inches) xeric plants. The root depth could be affected by choice of xeric plants, as well as by soil type.

b. For annuals, use of drip irrigation rather than spray irrigation resulted in approximately 10 percent less water requirement.

c. Warm-season turfgrass (e.g., Buffalograss) had lower water requirements than the other cool-season turfgrass scenarios except with regard to the scenario that represented use of soil amendment and irrigation management using a more advanced "manage allowable depletion" (MAD) approach for cool-season turfgrass. This analysis suggests that an aggressively managed cool-season turfgrass with proper soil amendment may achieve water savings comparable to or greater than warm-season turfgrass, depending on the management strategy implemented. This is an important finding because GreenCO and Colorado State University Turf Program both recommend that turf selection should be based on the desired functional, recreational and aesthetic benefits, in addition to considering maintenance and water requirements. For example, cool-season turfgrass is desirable for certain landscape purposes, such as for high use areas, whereas warm-season Buffalograss has lower traffic tolerance and may be more suitable for low-traffic areas.

d. For cool-season turfgrass (e.g., Kentucky bluegrass) management scenarios, the lowest water use resulted for the scenario represented by soil amendment and aggressively managed irrigation using a MAD approach, which typically requires advanced irrigation technology. (This is the same cool-season turf scenario described in c., above.) This scenario reduced the irrigation requirement by nearly 50% relative to the baseline turf scenarios under an average water year. This scenario approaches the water savings achieved by drip-irrigated annuals and is similar to warm-season turf. In summary, the irrigation management practice at a site is a critical factor in the irrigation requirement. This may represent a significant opportunity for savings on large landscapes or highly managed commercial landscapes, even if this is not directly transferable to the average homeowner.

5. The Dual Kc modeled results compare relatively well to the normalized empirical data from the literature with regard to plant selection, as shown in these examples for the Front Range:

    a. Xeriscape/Plant Selection--replacement of cool-season turf areas with shrubs, ground covers and perennials: Literature = 2.0 to 5.5 gpsf and Dual Kc Model =3.7 to 5.4 gpsf (average year).

    b. Xeriscape/Plant Selection--replacement of cool-season turf areas with xeric groundcovers and deep-rooted xeric plants: Literature = 5.9 to 11.5 gpsf and Dual Kc Model =8.5 to 12 gpsf (average year).

    These results assume that portions of lawns replaced with plants with lower water requirements would be irrigated appropriately (according to hydrozones).

    Study designs and site conditions were too variable to make this comparison for irrigation technology.

6. At a basin-scale, Aquacraft's modeling exercise demonstrated that landscape water conservation and efficiency measures can help to significantly reduce the water gap in Colorado. Three landscape-related conditions were evaluated that considered reductions in over-irrigation and effective irrigated area (scenarios including 10% and 25% reductions in irrigated area). Model results for the South Platte Basin indicate that reductions in over-irrigation and reducing effective irrigated landscape areas can play a significant role in filling the projected 2050 water gap, without eliminating or reducing the aesthetic quality of Colorado landscapes. Of the three landscape-related conservation scenarios evaluated, reduction in over-irrigation provided the most significant water savings, with essentially no impact to landscape quality (since this scenario simply reduces water waste). With regard to reduced effective irrigated area, there are multiple combinations of plant types that can be selected to achieve a 10 to 25 percent effective irrigated area reduction on individual landscape parcels, without drastically changing the character of Colorado's landscaped areas. However, implementing this type of change at a basin or state-wide scale would be challenging. The feasibility of implementation of the modeled scenarios would require additional input from water providers.

Recommendations

Many of the recommendations from GreenCO's 2009 Literature Review remain valid, with some additional recommendations emerging as a result of this 2015 study. These recommendations apply to state-led efforts, water providers and the Green Industry, with recommended actions including:

1. Support well-designed monitoring efforts that can be used to better quantify the expected benefits of landscape BMPs and that can be used to support modeling efforts

based on empirically-derived relationships (real-world data). Overall, this analysis indicates that there are significant data gaps for empirical studies related to landscape water conservation, particularly studies that provide adequate metadata to normalize data sets to support broader planning objectives. Empirical studies are important because they can incorporate behavioral aspects of water conservation in a manner that agronomic models and theoretical calculations do not. Empirical studies can be used to develop better estimates of uncertainty in demand models and should continue to be conducted and funded.

2. Develop a set of standardized monitoring and reporting protocols for large-scale and site-specific landscape water conservation studies to increase transferability of study findings through better metadata reporting.

3. Assess interest in a statewide database to store conservation studies that follows a standard format noted in #2 above. Such a database would need to be kept as simple as possible to encourage participation and use. It may also be worthwhile to discuss pursuing funding at a national scale from EPA and professional organizations, following a model similar to that used for stormwater BMPs (www.bmpdatabase.org).

4. Support efforts to implement separate metering of indoor and outdoor water use to refine estimates of outdoor water demand. Denver Water and others are implementing this practice in certain areas.

5. Analyze and evaluate House Bill 10-1051 data sets to develop a realistic baseline of outdoor water demand. Although residential single-family water demands have been characterized in several large-scale studies nationally and in Colorado, data for the multi-family properties and irrigation-only accounts is far less reliable and could be improved by obtaining better information on the multi-family sector and irrigated urban landscape areas.

6. Organize a large, systematic study of residential water use and landscape irrigation based on sampling from all of the large water providers in targeted basins such as the South Platte, similar to the end use studies in the Aquacraft models. This would be a major undertaking, but the work would provide a wealth of details on the parameters needed to make accurate predictions of water use, and would greatly improve the accuracy of the predictive tools. This would allow water demand projections and potential savings to be made in a more explicit and mathematically satisfying manner.

Conclusion

As Colorado works to meet the projected water gaps identified in the State Water Plan, the findings above should be considered in the development of sound water policy. This study further confirms that there are significant opportunities for landscape water conservation through the use and adoption of Best Management Practices, and it is possible to reduce outdoor water use and still enjoy the environmental and aesthetic benefits that the urban landscape provides.

PUBLIC INPUT ITEM 90

Basin Implementation Planning Team
Southwest Basin Roundtable
annsoliver@gmail.com
carrie@durangowater.com
970-259-5322

September 16, 2015
Memorandum
To: James Eklund, Colorado Water Conservation Board Executive Director
From: Ann Oliver and Carrie Lile, Southwest Basin Roundtable contractors
Subject: Comments on 2nd Draft of Colorado's Water Plan

Thank you for the opportunity to review and comment on the 2nd draft of Colorado's Water Plan. The Southwest Basin Roundtable has reviewed and discussed the plan and submits the following comments on both substance and form for your consideration and incorporation into the final plan.

Overall, the Roundtable comments that Colorado's Water Plan represents a solid step forward in highlighting many issues around water management in the state for discussion and deliberation at all levels, grassroots, to policy makers. Participants recommend that the water conservation districts within the Southwest Basin consider endorsing the Plan.

The Roundtable is aware of the meeting held by Garfield County Commissioners, along with other west slope county commissioners, to share their resolution in support of the Plan. Montezuma County has passed a similar resolution. We support this approach on the part of the county and we suggest that other counties in the Southwest Basin consider doing so as well.

The Southwest Roundtable strongly suggests that the Plan lay out a clear timeline for review and updating into the future. Ideally, the Plan would be updated after each iteration of SWSI; the Roundtable notes that the two processes (SWSI and statewide water planning) function well together, with SWSI compiling data on water supply and use with the Plan synthesizing and applying this data to help guide local and state actions and policy for our water future.

Another overarching comment from the Southwest Basin Roundtable is that the Plan should address and include as an action item (in **Chapters 6, 9 and 10)** a stronger commitment at the state level to funding and supporting the technology and technical assistance necessary to help Colorado's farmers move quickly toward higher water use efficiency (including on farm and delivery system efficiencies). While the Roundtable stresses that such improvements must make sense for each farmer's business and bottom-line, it identifies the lack of affordability of implementing technologies for irrigation efficiency as an obstacle to Colorado's farmers in moving toward much improved, even state-of-the-art efficiency in water use. Efficiency improvements should not be made in only one sector of Agriculture (i.e. delivery system improvements) but to all aspects of Agriculture to provide the most "bang for your buck" in conserving water and providing benefits to all users. Yet participants noted that investments in system and on farm efficiencies will pay off year-in and year-out, with the largest pay-off coming in shortage years. Benefits of increased efficiency can accrue to storage reservoirs, as well. The Roundtable notes that Federal NRCS programs are not currently meeting the full need and recommends that state resources be specifically dedicated toward filling that technical and financial gap. Along with additional support for application of

high efficiency technologies in agriculture, the roundtable suggests that the state make clear that it will not penalize users for conserving water.

Finally, the following are our line-by-line comments on specific sections of the Plan. The Southwest Basin Roundtable thanks you and your staff for all the hard work in putting this document together. We appreciate the effort you have made at incorporating input from all people, interests and basins around the state.

Best,

Sent via email

Carrie Lile and Ann Oliver
Basin Implementation Planning Team

Throughout document:

- Why no commas in numbers that are only 4 digits long? i.e., 1,000 not 1000? Seen throughout the document.
- 1/3 or is it one third? Switches throughout document.
- Consistency is needed for in-side or inside uses; use of the "-" needs to be consistent.
- Consistency is needed for acre-feet or acre feet (see page 44, used both ways).
- Many paragraphs are "aligned to the left" formatted, while the majority of the text is formatted "justify." This should be reviewed and consistent in the Plan. For example, Chapter 9 and Chapter 10 have multiple paragraphs aligned left.

Chapter 1 introduction: Collaborating on Colorado's Water Future
Page 1 and 2: need to be formatted; text doesn't align correctly to rest of document.

Chapter 2: Our Legal & Institutional Setting
Page 28: 1st paragraph under 2.5; Southwestern should not be capitalized.

Chapter 3: Overview of each basin
Page 39: second paragraph (starting with "Less than…") has transbasin used for diversion over to the Front Range; should be transmountain. The difference should be clear as to what type of diversions are being made. Double check remainder of document for "transbasin" as it typically is not the correct term when used. Also, consistency is needed in trans-mountain or transmountain; use of the "-" needs to be consistent.

Page 55: second paragraph, the SW Basin Roundtable has identified eight factors not seven for consideration of a new TMD.

Page 55: second paragraph, the word "basin" is misspelled. Also, to clarify the first sentence it should read "… *the Southwest Basin Roundtable expresses concern regarding new development from the Colorado River system as part of a new transmountain diversion."*

Page 55: 2nd paragraph under "Southwest Basin" has the word basin misspelled (Bsin).

Chapter 5: Water Demands
Page 85: since transmountain and transbasin are not interchangeable words, might be best to reference both when describing nonnative water.

Page 86: under "Municipal Land Use" you have a reference for a document that isn't there; only states "reference density paper" not the actual paper.

Page 87: in Table 5-3 under the Identified Agricultural Goals the descriptions for the Southwest Basin should read: "*Increase agricultural efficiencies by implementing at least 10 projects.*" The Southwest BIP does not explicitly call out implementing projects to reduce shortages, but rather to improve efficiency which may or may not improve water supply in water short areas.

Page 88: The description of Environmental and Recreational water demands does not adequately portray the information needed to make an assessment of needs similar to that completed for M&I and for Agriculture. We suggest that the following language be included in this section:

"*While identifying environmental and recreational attributes of importance is a necessary step; in some areas, quantification of the amount of water to support those attributes may be needed to assess environmental and recreational water demands, understand where there are gaps, and propose projects and processes to meet those needs. As further discussed in Section 6.6, our understanding of environmental and recreational water demands lags behind our understanding of municipal, industrial and agricultural demands. Section 6.6 proposes actions, including funding mechanisms, to develop this needed information*."

Page 90: should there be commas and a period at the end of the bulleted list? Looks incomplete.

Chapter 6: Water Supply Management for the Future

Page 108: Table 6.2-1: Common Themes across BIPs: Please add a "BIP activity" checkmark under the Southwest column for "Increase irrigated acres". This topic is addressed in the Southwest Roundtable Basin Implementation Plan in our discussion of agricultural gaps as well as on the IPP list.

Page 112: in Table 6.2-2, in the third column titled "2050 Gap (acre-feet)" for the Southwest our range is "*5100 – 16,000*" not "*8800 – 16,000*". These numbers were presented on page 5-32 of the Southwest SWSI Needs Assessment Report 2011. Also, in the fourth column "BIP ID'd Potential New P&M acre-feet" should be blank since we did not quantify all of our IPPs.

Page 122: in the first paragraph some numbers should be updated. First, the Southwest Region needs are likely to increase by "*19,500 to 31,200 acre-feet*" not "*20,000 to 31,000 acre-feet*". The second set of numbers (as described in the comment above for page 112) should reflect this update. The municipal water supply game is "*5100 to 16,000*" not "*8800 to 16,000*".

Page 128: in Table 6.2-3, the fourth column "Potential New acre-feet" the number should be updated; instead of "*41,354*" it should be "*50,600*" which includes potentially 43,000 acres of irrigated land (dry land and land in need of a full supply) in the La Plata River basin and 7,300 acres of irrigated land at the Ute Mountain Ute Tribe's Farm and Ranch Enterprise. Since updating the IPP list found in SWSI 2010, an additional 30 projects were added that include agricultural water supply as a component. For the fifth column, this number should not be "*5*" but either "*2*" to reflect the 2 IPPs that are specific to new lands or to "*30*" to represent all IPPs with an agriculture component.

Page 136: rewrite first sentence of paragraph under "meeting the Southwest's agricultural gaps": suggested wording: The Southwest BIIP identifies 10 projects that combined would provide 40,000 acre-feet of "new water". Nine of these ten projects are also counted for M&I uses.

Page 151: Please provide a definition somewhere in the plan to clarify what is meant by "direct protection" and "indirect protection."

Page 151: First paragraph: Please reference numbers of stream miles calculated in 2011 needs assessment using past tense, as our BIP mapped new Environmental and Recreational IPPs and therefore the numbers have changed. Also, we found and corrected some errors in stream miles supporting certain values that were reflected in the 2011 Needs Assessment map. For example, change last sentence to read: "Very few stream miles had identified protections for these values."

Page 162: formatting of the third paragraph is needed.

Page 169: last sentence, has two periods.

Page 262: Heading should be corrected to read “Southwest Basin”.

Page 262: Fourth paragraph: The last sentence should not begin with the word “Additionally” because it is simply giving examples of the kind of projects and methods included in the “67 environmental and recreational projects” mentioned in the previous sentence.

Page 279: first paragraph sentence beginning “Section 7.3…” seems to be missing something – needs clarification.

Page 137: Under “Meeting Colorado’s Environmental and Recreational Needs” known protections are discussed and stated that they can be identified. It would be helpful to define the word protection and what the ranges of protections mean on the ground.

Chapter 7. Water Resource Management and Protection

Page 279: paragraph 2 under “Introduction,” last sentence: Please include “*dilution and flushing of contaminants*” in list of ecosystem services.

Page 280: paragraph 2 under “Watershed Health Science”, sentence should read “*Duration describes the period of time a river experiences a given discharge*.”

Page 280: paragraph 2 under “Watershed Health Science,” sentence should read “*Finally, the timing of discharges, or seasonality, are part of the watershed’s hydrologic function*.”

Page 281: paragraph 1, last two sentences should read *“When natural ecosystem functions are altered, a watershed may no longer exist in equilibrium. The resultant changes to hydrologic function and water quality may have direct effects on water supply and infrastructure.”*

Page 281: paragraph 4, first sentence: the phrase *“the physical extension of these lands*” should be replaced, as it does not convey a clear meaning. Suggestion *“the remaining lands in the watershed…”*

Page 282: paragraph 2, sentence should read *“This is an example where concerned stakeholders can engage in collaborative dialogues to address very real watershed health concerns.”*

Page 283: paragraph 1 2nd sentence should read: *“Other groups may come together to discuss watershed protection in well-functioning ecosystems.”*

Page 284: paragraph 3 1st sentence should read: *“The CWCB recommends that the entities listed in the paragraphs above be consulted when considering the formation of forest health partnerships.”*

Page 285: last paragraph beginning “The Southwest Basin…”: Please change second sentence to read*: “This includes forest health and resiliency planning for the San Juan and Piedra watersheds, water quality monitoring and action on the Animas River, watershed health assessments for the Mancos, Dolores and San Miguel watersheds, and development of Source Water protection Plans for 23 public water suppliers.”*

Page 287: last paragraph, 1st sentence: Please clarify the period of record used for the statistic cited. *“In nine out of every ten years…”* Since when?

Page 288: 5th paragraph, first sentence: please include the word *"predicted"* between *"under"* and *"future".*

Page 294: second bullet, second sentence: please replace the word *"among"* with *"between".*

Page 297: second paragraph, 3rd sentence: please add a comma between *"EPA"* and *"states".*

Page 300: last paragraph, 4th sentence: recommend adding *"and expensive"* to the end of the sentence.

Page 301: 2nd paragraph under "Water Quality Management": recommend including a reference to Regulation 31, and even the basin specific regulations, in this paragraph. This helps people know where to look for standards.

Page 304: 1st paragraph under "Water Quality and BIPs", 2nd paragraph: please change the word *"prevention"* to *"protection".*

Page 305: under "Integrated Water Quality and Quantity Management Actions", please include an action item that addresses the interplay between irrigation efficiency and non-point source pollution in both the residential and agricultural settings. Working with landowners to improve their irrigation efficiency and reduce surface runoff is a key BMP in the toolbox for addressing nonpoint source pollution.

Chapter 8. Interbasin Projects and Agreements

Page 311: 1st Box, letter C: the Southwest Basin recommends including an additional bullet: *"Identify and assess alternative sources to a new TMD."*

Page 321: Southwest Basin row, Compact Discussion cell: *change "pits"* to *"puts".* Also, add the following from page 101 of the SW Basin BIP: *"A new TMD must be considered in conjunction with alternative water sources that do not rely on the Colorado River basin water supplies."* Our Basin strongly supports this statement and it is a significant part of the discussion of TMDs and Colorado River Development in our BIP, therefore we request that it be reflected and included in Table 8-1 of the CWP.

Southwest Roundtable participants agree to include: *We recognize the meeting took place Garfield County and resolution was passed and that some counties in the Southwest Basin have passed a similar resolution (in support of Conceptual Framework). IBCC and roundtables should continue their roles in development and implementation of Conceptual Framework.*

Chapter 9. Alignment of State Resources and Policies

Page 324: 1st paragraph, 2nd sentence: replace *"keeping Colorado whole"* with clearer less idiomatic wording. Consider just saying these things are critical to Colorado, or else explain precisely what is meant by *"keeping Colorado whole".*

Page 330: Table 9.2-1 and asterisk below: What is meant by *"forthcoming*"? Who is working on estimating and refining these costs? Currently the Southwest Basin Roundtable has not been asked to do this and as of this time does not have plans to do so.

Page 331: 1st paragraph, 3rd sentence: delete the semicolon after the word *"required".*

Page 332: 3rd paragraph, last sentence, last phrase: change *"is"* to *"are".*

Page 336: 1st paragraph. The conclusion drawn by the second to last sentence seems to depend on an estimate of the cost of completing environmental and recreational projects that are currently identified. This estimate is missing from the paragraph and should be included in the preceding sentence.

Page 339: 1st paragraph: third sentence: replace *"spend"* with *"spent".*

Page 339: 5th paragraph: 2nd sentence: replace *"Inner"* with *"Inter".*

Page 340: under "Mill Levy", 2nd sentence: replace *"affects"* with *"effects".*

Page 341: Please make clear the difference between the various lists on this page. What is the difference between the first numbered list of Actions and the second numbered list of Actions? Why are they both necessary?

Page 366: under Actions #1: please define what *"lean"* means in this context? It seems like lingo.

Page 372: Table 9.4-3, under Southwest BIP row: The entry in the *"Challenges"* column is not true and should be deleted. Permitting is clearly mentioned as a constraint in Table 9, pg. 39 of the Southwest BIP.

PUBLIC INPUT ITEM 92

DELTA COUNTY, COLORADO

BOARD OF COUNTY COMMISSIONERS

COUNTY COURTHOUSE • 501 PALMER STREET • SUITE 227 • DELTA • COLORADO • 81416-1796

PHONE: (970) 874-2100 FAX: (970) 874-2114

www.deltacounty.com

Dist. 1: C. Douglas Atchley - Dist. 2: C. Bruce Hovde - Dist. 3: J. Mark Roeber

September 15, 2015

TO: State of Colorado

RE: Colorado Water Plan Comments from Delta County Board of Commissioners

Delta County Board of Commissioners appreciates the opportunity to provide comment on the Colorado Water Plan. Our County has been a member of the Gunnison Basin Roundtable since its inception and continues to serve. Water is the driving force in our agriculture and recreation based economy and continues to dictate where growth occurs.

The Colorado Water Plan (CWP) is comprehensive and covers a complex issue at all levels. Delta County Board of Commissioners provides the following specific issues with the CWP:

1. Any plan or program for a new transmountain diversion must fully protect the priority of existing water rights decrees and future diversion, storage and uses for the source River Basin. This is especially critical with regard to meeting current and future agricultural needs.
2. Solutions outlined in the CWP to supply water from growth and development in one part of the state should not override land use plans and regulations adopted by local governments in the part of the state from which water will be taken.
3. The CPW should enhance, not threaten the economic, environmental, and social well-being of the West Slope and should provide for water allocation for future growth based upon the unused native flows in each River Basin.
4. The CWP should include local solutions and compact curtailment to meet Colorado's future water needs without a major state water project or related placeholder water right.
5. Any new state mandates, legislation, fees and/or taxes must include extensive roundtable input.
6. The CWP should further delineate the benefits of senior consumptive rights, irrigation and other return flow activities that often benefit downstream users.
7. The CWP should clearly direct each basin to exhaust available water supply and conservation measures within its own basin before planning diversions from others areas of the state.
8. The CWP needs to continue to stress the need for roundtable involvement and input and all levels.

The Delta Board of County Commissioners supports the efforts of the Colorado Water Plan.

Sincerely,
Delta Board of County Commissioners

J. Mark Roeber, Chairman **C. Douglas Atchley, Vice Chairman** **C. Bruce Hovde, Commissioner**

PUBLIC INPUT ITEM 93

Northern Water
Northern Colorado Water Conservancy District
220 Water Avenue Berthoud, Colorado 80513
Phone 1-800-369-7246 • Fax 1-877-851-0018
www.northernwater.org

September 15, 2015

Colorado Water Conservation Board
1313 Sherman Street, Suite 721
Denver, CO 80203-2239
Attn: Mr. James Eklund

Dear James:

Northern Water would like to thank you, your staff, and the CWCB Board Members for your dedicated effort on the Colorado Water Plan. It is an enormous undertaking. We also want to thank your staff and John Stulp for working with the Front Range Water Council and the South Platte and Metro Roundtables concerning the Plan. Northern Water has actively participated in the development of the Metro/South Platte Roundtables' combined comment letter and the FRWC comment letter. We believe the CWCB should incorporate changes recommended by the Roundtables and FRWC.

While not repeating all the comments, we have chosen to highlight much of the Metro/South Platte Roundtables' key input. We have included a few additional comments that are not contained in either the FRWC or Roundtables' letter.

Chapter 1 – Introduction

We agree with the Roundtables that "The statements in the introduction set the tone for those reading the Plan. We believe that several of these statements currently set the wrong tone for ongoing collaboration and discussion." These statements should be eliminated or modified as proposed in the Roundtables' letter.

Of specific note, we disagree with the statement that water laws and administration are "out of touch with our changing needs." We would suggest the following modification to this statement: "The Colorado Doctrine has worked well for 150 years to protect the property rights of water rights owners. Incremental adjustments have worked well to accommodate changing needs. With minor changes of specific statutes to meet new challenges, we are confident the Colorado Doctrine will continue to be effective in meeting our citizens' needs in the future."

Chapter 4 – Water Supply

We are disturbed by the limited discussion in the Role of Water Storage section with the focus almost entirely on rehabilitating or enlarging existing reservoirs. We would reiterate our April 28, 2015, comment that inclusion of Table 4-3 is misleading at best as it implies that reservoirs such as Lake Granby could either be enlarged or dredged to provide additional supply. Likewise, Table 4-4 listing storage deltas for existing reservoirs is not informative and should be removed as there is no analysis concerning the likelihood of rehabilitating or enlarging these reservoirs.

Both the IBCC and the Roundtables stress the important role of storage. In addition, nearly every speaker at the September 14, 2015 Interim Water Committee Hearing in Greeley spent time focusing on the important role of water storage.

As proposed in the Roundtables' letter, we believe the Role of Storage section on page 71 through 75 should include a discussion of the following items (taken from the IBCC discussion on page 231).

> The IBCC defined storage and other infrastructure as a critical cross-cutting topic. Storage can help water users maximize supplies by re-timing water availability. This allows users to capitalize on average and wet years and may increase the possibility of sharing water resources when possible. Storage and infrastructure are also important for minimizing agricultural losses, maximizing the use of conservation and reuse savings, and allowing for additional new supplies. In addition, storage can play a critical role in supporting the environment, particularly in support of endangered and threatened species recovery programs. Moreover, storage is an important element in protecting Colorado's interstate water rights pursuant to its compacts and equitable apportionment decrees. As Colorado plans for its water future and looks ahead to a projected 2050 supply gap, new storage and infrastructure will be needed to share, transfer, store, and convey water for the benefit of all. Additionally, new opportunities for existing storage and infrastructure should be explored to provide maximum utilization for all purposes and ensure compact compliance.

Chapter 5 – Water Demands

On page 78, the Draft Water Plan states "that portion of water that is not consumed makes its way back to the river (referred to as return flows)." The text that follows states "Colorado consumes 5.3 million acre-feet, but this water can be used multiple times." If the water is consumed, then it cannot be used multiple times. It is important that the Water Plan is clear about the differences between "diversion and use" and consumption throughout the document. In response to our comment on an earlier draft, the CWCB stated that it would assure precise language was used. This is a reminder to make the appropriate changes to the Plan.

We agree with the comments of the Roundtables on this Chapter. We would specifically emphasize the following comments:

> Under the subsection titled "***Overview of Agricultural Needs***" (page 87), it should be highly emphasized here and in other places within the CWP that most of the surface water within the South Platte Basin has already been used for other beneficial uses prior to diversion for agricultural uses. Furthermore, the return flows generated from irrigation have allowed the Basin annually to divert and beneficially use over two times the average supply of water entering the Basin each year.
>
> Similarly under the subsection titled "***Municipal Reuse***" (page 85), this subsection should note the impacts to existing uses through municipal reuse as outlined in the SP-BIP. Reuse reduces the existing basin supply of water and at times redistributes the water supply gap. These limitations and impacts should also be noted in Section 6.3.2 of the CWP.

Chapter 6 – Water Supply Management

Existing TMDs allow for the reuse of supplies, a goal of the Plan. Thus, the discussion on page 239 should point out the need not only to maintain the infrastructure of existing projects, but also the need to protect the appropriation of projects, especially existing TMDs. We also recommend a new Action Item on page 241 to confirm the necessity of protecting the appropriations of existing TMDs.

Once again, we support all of the recommendations contained in the Roundtables' letter and would specifically emphasize the following recommendations:

6.1 - Scenario Planning and Development: Chapter 6 begins with a high emphasis on demand management strategies (conservation and reuse) as "important options to meet current and future needs. The BRTs believe that the CWP should support a balance of solutions, without placing more emphasis on one solution than any of the others. The BRTs recommend that additional multipurpose storage projects be included under long-term solutions in the paragraph on page 94, as it is the glue that holds all solutions together.

6.3.1 Benefits of Water Conservation: At a recent South Platte Basin Roundtable meeting, Jacob Bornstein specifically recognized the need for new supplies to make up for reduced return flows which are no longer available due to conservation and reuse efforts. The following additional paragraph should be included at the end of this section beginning on page 158:

"The increase in municipal system efficiency due to conservation and reuse may reduce the water supply available to downstream irrigation users unless new supplies are added from other sources like storage to make up for the loss of water from additional water consumption."

Conservation Stretch Goal: Of specific concern to the BRTs is the municipal conservation "stretch" goal of 400,000 acre-feet statewide by 2050. We understand that the stretch goal is meant to be aspirational and push the envelope. However, the danger of a stretch goal is that it gets used as a precondition for implementing other solutions before it is understood whether the stretch goal is achievable or not. The CWP language needs to be very clear that the quantified stretch goal is aspirational, it is unknown if it can be achieved, and it should not be attached as a condition to implementing other solutions. **The Plan needs to be clear on this point so that others, particularly federal permitting agencies, do not view a potentially unattainable stretch goal as State policy and make it a condition of permitting.** (bold added for emphasis)

6.3.4 – Agricultural Conservation, Efficiency, and Reuse: This section correctly states that increased irrigation efficiency does not add any new water and in fact may decrease available water as it increases on farm consumptive use and decreases return flows in water short systems. When advocating for reduced diversions to benefit instream flows, the CWP should make sure to note that the current agricultural diverter can't continue to call for their full decreed flow rate and then proceed to leave a certain amount of water in the river because of a volunteer flow agreement. It should be noted that such "call" could

prevent water from being diverted by an upstream water right in order to pass to a downstream more junior water right all in the name of "enhanced environmental flows." Proper administration should be stressed to ensure that injury to vested water rights is avoided.

Action #12 "Framework for Evaluation of Agricultural Transfers" on page 241, it states that "*a framework for the evaluation of agricultural transfers will be developed from a technical and legal perspective before consideration of requiring such an evaluation.*" On page 238, under the IBCC recommendations, a similar concept is included. However, the IBCC recommendation includes a good description of several initial concerns with this concept. The BRTs reiterate these concerns, particularly the fact that requiring such an evaluation could encroach on private property rights and become a permitting hurdle functioning like an Environmental Impact Statement (EIS). The BRTs do not currently believe that such a framework would be helpful and recommends removing Action #12 on page 241.

Chapter 8 - Interbasin projects and Agreements

The second draft of the CWP states that the CWCB will monitor ongoing conceptual framework discussions and consider adopting the conceptual framework (pages 319 and 419). We recommend that the CWCB not adopt the framework as it is a work in progress that may be modified as dialogue continues. Further, the implementation of any specific project will be dependent on permitting requirements and negotiations of the parties involved in the specific project.

Northern Water supports the CWP's development of a collaborative programmatic approach that is voluntary and market driven to assure that Colorado continues to meet its compact obligations. However, we believe there is also a need for an administrative protocol designed with stakeholder input to achieve required curtailment levels should conservation programs or other voluntary curtailment programs fail to achieve necessary results. Definition of this administrative protocol is needed so that potentially affected entities can plan alternative courses of action in response to such an eventuality.

Chapter 9 - Alignment of State Resources and Policies

9.4 Framework on More Efficient Water Project permitting Processes

We applaud CWCB staff for their efforts to include steps in the Water Plan to make Colorado's coordination with federal agencies and State permitting of projects more efficient while not diminishing permitting requirements. We would encourage the state to make the additional changes recommended in the Roundtables' letter to further this goal.

- The section could be made a clearer by separating the State 401 certification and Wildlife Mitigation (122.2) process discussions.
- The State should commit to supporting project proposals once they have successfully completed the State permitting process.
- In the "Preliminary technical review for state processes" discussion beginning on page 369, add language that makes it clear that for projects that require NEPA analysis, State

agencies should rely on NEPA studies and analyses to make their decisions. This was recommended by the South Platte/Metro BIP and is implied in the current language, but it should be more clearly stated to ensure coordination and involvement of state agencies in NEPA so additional technical analyses that result in added expense and delays are not needed to meet state requirements. SMWSA also recommends that this section describe any changes to State law that are necessary to ensure this consistency.

- Concerning 122.2, the Plan states on page 366 "The legislation that created the 122.2 process for the mitigation of fish and wildlife impacts associated with water project development is somewhat constraining in that official communications between the project proponent and CPW staff are not initiated until after the release of a Draft EIS." In reading the pertinent statute and the associated Rules, we see significant benefit resulting from communication beginning before the release of the Draft EIS. We believe the process should be similar to the proposed 401 Permitting Process with communication occurring very early in the process prior to the DEIS. If the State does believe it has limitations on communication based on policies/rules, we would suggest the rules be amended to clarify that early communication is allowed with the goal being formal submittal of the plan shortly after the DEIS.
- The BRTs supports #1 under Actions that calls for working with permitting agencies to determine how to make them more efficient and effective. SMWSA recommends language specifically recommended in the South Platte BIP be added to this Action specifying a "date certain" for this to occur, and including specific goals and timeline for completion of these goals.
- The BRTs encourage the CWCB to add a subsection to this section of the CWP including recommendation to improve the Federal Processes. Although Colorado cannot unilaterally implement changes to Federal Processes, it can collaborate with Federal agencies on certain reforms, and Colorado's congressional delegation can work with other states to effect changes. The South Platte/Metro BIP Section 5.5.11.1 can serve as a starting point for this subsection of the final CWP.
- The BRTs recommend that the CWCB add the following specific recommendations from the SP BIP to this section of the CWP:
    - We would encourage the State to select the Department of Natural Resources as the lead agency for projects because DNR has both expertise and interest in the wide variety of issues associated with the NEPA process through its Water Conservation Board, Division of Water Resources, Parks and Wildlife and State Land Board.
    - Current 401 Certification regulations require an anti-degradation review of proposed water projects. Such reviews are designed for and are applicable to permitting of point source discharge, such as wastewater treatment plants. These analyses are difficult to adapt to water supply project evaluations and reviews. This inconsistency requires extensive additional analyses and studies and causes additional incurred costs by the project proponent and increased time for State employees to review projects. Consideration should be given to tailoring state statutes and regulations to specifically meet the needs for permitting water supply projects.
    - Changes should be made to applicable Colorado statutes and regulations in an effort to bring efficiency to the permitting process. Regulations or guidance should specify that state input into any NEPA compliance actions associated with

water projects should begin early in the process and continue throughout the process to conclusion.

Chapter 10 – Critical Action Plan

The format used in this Chapter is effective for documenting the Action Plan.

Page 251 and 252 discuss the alternatives to Federal Wild and Scenic River designation. We believe the State is almost always better equipped to assist meeting the water needs of Colorado citizens than the federal government. In this regard, we recommend implementing alternatives to Wild and Scenic River designation a goal of the Water Plan.

We support the Critical Action Plan recommendations contained in the Roundtables' letter. We would specifically highlight the following recommendations:

IIa. Improve Permitting Processes

- New Item–For projects that require NEPA analysis, identify and approve legislative or administrative changes necessary to ensure state agencies participate as a cooperating agency, designate DNR as the lead agency, coordinate when appropriate, include issues in scoping, and rely on NEPA studies and analyses to make their decisions.

IIe. Promote Additional Storage and Infrastructure

- Recommend addition of a critical action: "Promote the development of new local and regional storage and infrastructure projects that both divert and retain native unappropriated waters where feasible and store water supplies from other multipurpose projects and methods to meet water needs."

VId. Protect Compact Entitlement and Manage Risks

- We recommend that this title be changed to "Protect Compact Entitlement, Develop Entitlement, and Manage Risks"

Conclusion

Northern Water would like to once again thank the State for the opportunity to comment on the Plan. Northern Water looks forward to participating as appropriate in the Plan's implementation.

Sincerely,

Jim Hall

Jim Hall, P.E.
Project Manager
Northern Water Representative on Metro and South Platte Basin Roundtable

PUBLIC INPUT ITEM 94

colorado waterwise

The Voice of the Colorado Water Conservation Community

September 22, 2015

Rebecca Mitchell
Chief, Water Supply and Planning Section
Colorado Water Conservation Board
1313 Sherman Street, Room 721
Denver, CO 80202

Re: Comments on Second Draft of the Colorado Water Plan

Dear Ms. Mitchell:

Colorado WaterWise's (CWW) mission is to serve as the collaboration leader in the efficient use of urban water in Colorado by connecting stakeholders and providing resources. Our members include representatives from water utilities, environmental interest groups, non-government organizations, and colleges who are committed to educating the public about our most important natural resource.

In reviewing water education and outreach efforts in Colorado, CWW identified some significant voids. Simple information about the value of water exists in general, but little of that is specific to Colorado. Information specific to Colorado water is often technical and/or lengthy, and geared to a more informed audience not the general public. A number of utilities in Colorado, particularly the larger water providers, have robust water conservation campaigns and messaging, but very few deliver comprehensive messages in the context of the value of water to Coloradans. **Colorado is the only large state in the west without a state-wide, consumer-friendly water education information campaign such as those in other states: California's Save our Water, Arizona's Water Use It Wisely, and Texas' Water Smart.**

In 2014, Colorado WaterWise's board of directors decided to change that. The Board approved the funding and creation of a toolkit that would arm water interests and educators with professionally produced materials that inform the public about the value of Colorado water. The effort was advanced by the successful outcome of the Colorado Water 2012 campaign and the desire to continue sustained and coordinated public outreach in Colorado about water. Eighty stakeholders from across the State provided input and direction on this CWW project.

CWW hired a professional marketing and public relations agency to develop the toolkit. The agency started the effort by conducting an extensive public opinion research review. Colorado

has spent a considerable amount of money on public opinion research. Our research evaluated included CWCB's Public Opinions, Attitudes and Awareness Regarding Water in Colorado (2013) and 11 other local, state or national studies on public opinions about water. **The research review revealed a very troubling fact for Colorado policy makers and water managers: many of the people who currently pay or will pay for water in our state do not understand its value and how it gets to their tap, nor the finite nature of this resource.**

Additionally, people ages 18-34 who have lived in Colorado less than 10 years are the least concerned and informed about water quality, availability and infrastructure. Several barriers also were noted to increasing the appreciation of water among Coloradans, including the complexity of the issues; low price of water; and the lack of overarching, consistent and compelling messages about water across our state.

Research identified shortfalls in awareness of the following areas:

- The Life Cycle of Water
- The Finite Nature of Water/Projected Shortfalls
- The True Cost of Water
- The Varied Uses of Water

Although Colorado WaterWise is primarily an organization that fills the state's *conservation* niche, the Live Like You Love It campaign broadens CWW's scope to all facets of water use in its Care, Commit and Conserve taglines. Colorado Water Live Like You Love It is not an advocacy campaign, but rather a holistic message in that regardless of how you use water, you should "live like you love it." **CWW launched the Colorado Water - Live Like You Love It campaign last year to deliver a unified, consistent message about the value of Colorado water and the need to conserve, care for and commit to becoming more informed about our critical and finite resource.** Educational materials include fact sheets and infographics that explain the water cycle and uses, an award winning video, advertising and social media templates and a newly launched website, www.lovecolorado.org.

The information is specific to the unique nature of Colorado's water systems and uses. It educates users on the importance of Colorado water to the west, how it is used and transported, and hands-on ways everyone can "live like they love it." The theme, look and messaging in the campaign was designed to resonate with Millennials (people born in the 1980s to 2000s) because the research showed this was one of the least informed audiences about water *and* the largest group of decision makers.

Colorado Water Live Like You Love It is currently being used by about 15 statewide groups including Northern Water, City of Greeley, Colorado Springs Utilities, Loveland Water and Power, City of Fountain, Pueblo Board of Water Works, Western Resource Advocates and more. The Environmental Protection Agency in Washington D.C. has selected Colorado Water - Live Like You Love It as one of 18 programs that model how states are promoting a greater understanding of climate related concerns into water education. Additionally, the Colorado

Department of Public Health and Environment will offer the Colorado Water - Live Like You Love It toolkit as an incentive to any utility participating in their Pursuing Excellence Program.

Colorado's Water Plan Second Draft notes the importance of an informed public: *"To achieve a sustainable water future, Coloradans must be sophisticated water users"*. Other than encouraging existing entities to continue water education, the plan lacks specific and tangible ways in which education can and should continue to support the desired behavior changes needed to meet its future water needs.

CWW believes the absence of a statewide coordinated water education campaign should be reconsidered and included in the Plan. Additionally, the state should allocate sufficient funding to this effort. The Water Plan notes, *"The lack of financial support and professional resources is a large barrier for implementing these goals. To maintain the momentum of Colorado's Water Plan beyond 2015, outreach and education projects need a dedicated grant fund for information and communications tools that address Colorado's water challenges. Creating a new fund creates the opportunity for stakeholders interested in water outreach, education, and public engagement to move important projects forward."*

CWW could not agree more and would strongly encourage CWCB to use the Colorado Water - Live Like You Love It campaign as a launch point. The state has done a great job of conducting public opinion research on awareness about the issue; it's time to put that knowledge into action and change behavior. Changing behavior so that Coloradans live sustainably with our finite water resources will be extremely difficult. It has taken decades for recycling to become a standard practice in Colorado and across the country. The behavior change Colorado Water - Live Like You Love It campaign hopes to accomplish is of the same scale and will require years of effort and considerable resources to implement via public education.

One of the strengths of the Live Like You Love It campaign is that it is designed to be customized with specific messages for specific regions or issues while still retaining the advantage of a positive and cohesive statewide appeal. The message is positive and reinforces the tremendous state pride in Colorado. It is a customized message for Colorado, which is unique. As one of only two headwater states in the U.S., our water system and the importance of it to our state and the west are unique and provide a very important educational platform to build upon. Colorado Water - Live Like You Love It connects Coloradans to their water. Whether a watershed is focused on reducing agricultural transfers, building multi-purpose storage, protecting threatened and endangered species, or protecting watershed health, everything depends on an engaged and informed public ready to provide input. People need to understand an issue before they will support it. Colorado Water - Live Like You Love It encourages Coloradans to own their water, so they will value it and pay to protect it.

The State Water Plan calls for a new fund to focus on the bulleted topics below. Bolded are the topics that are currently included the Colorado Water - Live Like You Love It campaign and could be expanded.

- Colorado's Water Plan
- Colorado's eight Basin Implementation Plans
- **Colorado water challenges, solutions and the need to be adaptable to changing conditions**
- **Connection between climate change and water**
- **Water conservation & reuse**
- Integrating land use and water supply
- **Water quality –use a watershed approach for outreach and community engagement**
- Agricultural viability options
- **Education and outreach to support environmental and watershed strategies**
- Outreach to energy companies

A statewide campaign is going to take significant resources to do well and be effective. As the research has revealed, if one really wants to move the "public opinion" needle, one must do mass media advertising. In researching costs, the Arizona Water Use It Wisely team revealed campaign costs in excess of $500,000 to launch. That level includes very limited advertising.

CWW would like to see the State Water Plan revised to recommend a coordinated, statewide education program like Colorado Water - Live Like You Love It and the necessary funding to continue and sustain the campaign. The state has undoubtedly expended considerable budget and resources to develop the State Water Plan. CWW applauds CWCB on this massive endeavor. The public's support and participation will be one of the most significant factors in the success of implementing the State Water Plan. Our members and stakeholders have repeatedly expressed the need for resources to be allocated toward building public awareness and changing behaviors that affect water quantity and quality issues. We responded by building turn-key communication tools that have proven useful to 15 organizations that serve over 500,000 Coloradans. CWW promotes ways to collaborate to help our members achieve their goals, and we believe a statewide education program like Live Like You Love It can enhance existing efforts.

Sincerely,

Alyssa Quinn
Co-Chair

Frank Kinder
Co-Chair

PUBLIC INPUT ITEM 95

DOMINION WATER AND SANITATION DISTRICT

8390 E CRESCENT PARKWAY | SUITE 500| GREENWOOD VILLAGE | COLORADO | 80111 | 303-779-4525 PHONE | 303-773-2050 FAX

September 16, 2015

Mr. James Eklund, Director
Colorado Water Conservation Board
1313 Sherman Street, Room 721
Denver, CO 80203

RE: Colorado's Water Plan

Dear Mr. Eklund,

Dominion Water and Sanitation District (Dominion) would like to thank you and the Colorado Water Conservation Board (CWCB) staff for recognizing the importance of water demand management in the second draft of Colorado's Water Plan. Demand management is the foundation of the water planning that Dominion has been developing with Sterling Ranch and Douglas County over the past decade, and is essential in creating a balanced, renewable water supply throughout the semi-arid west.

Demand management also makes precipitation (rainwater) harvesting a viable land use application. Although not relied upon as a water supply until a decreed augmentation plan is in place, precipitation harvesting systems are being incorporated into the first phase of development at Sterling Ranch and integrated with the stormwater management system. Sterling Ranch will initiate a Substitute Water Supply Plan to allow for several years of operation and additional data collection prior to filing for an augmentation plan. The information that we have collected since 2010 under our pilot project proves that precipitation harvesting is a viable, efficient, sustainable, and renewable water supply.

We appreciate the leadership of the CWCB, Division of Water Resources, and Colorado legislature in supporting this opportunity in Colorado through the 2007 Holistic Approach study and 2009 and 2015 legislation. We look forward to continuing working with you to advance the topics of precipitation harvesting, with stormwater integration and demand management, toward promoting smart land use decisions for Colorado's future.

Sincerely,

/s/ Harold Smethills

Harold Smethills, President
Dominion Water and Sanitation District

cc: Rebecca Mitchell
Mary Kay Provaznik
Beorn Courtney

PUBLIC INPUT ITEM 96

First Name: Robert
Last Name: McCormack
Affiliation: Boulder Flycaster's Chapter of Trout Unlimited
Email: troutrobert@gmail.com
Phone (Example: 000-000-0000): 3033892528
Cell Phone (Example: 000-000-0000): 2012137295
River Basin: South Platte
Constituent Group: Environment and Recreation
Comments to be considered in Colorado's Water Plan:
Dear Board Members,

Thank you for the opportunity to provide input on Colorado's Water Plan. The Boulder Flycasters are a Chapter of Trout Unlimited, North America's premier coldwater conservation group, and Colorado Trout Unlimited, a leading conservation group in our state. A 501c3 corporation, the Flycaster's mission is to conserve, protect, and restore coldwater fisheries and their watersheds. We currently have over 1000 members in the Boulder area and implement our mission with outreach events, youth education, and conservation projects. Boulder Flycasters has been involved in many conservation projects over the years. In the last five years we have implemented major stream and riparian habitat improvements on Middle Boulder Creek, South Boulder Creek, and Jenny Creek in the upper Boulder Creek watershed. Given our mission and goals we are very interested in a Colorado Water Plan (CWP) that:

- Keeps water in streams for fish, wildlife, and recreation: The Colorado Water Plan should support innovative water management techniques and irrigation infrastructure upgrades that improve agricultural operations and increase river flows. The CWP should provide a mechanism to compensate agricultural and municipal users who use their water rights to improve stream flows.
- Establishes stream management plans (SMP) in each basin and provides for implementation of the SMPs: The Colorado Water Plan should ensure that each basin roundtable funds, adopts, and implements a SMP that includes consumptive and non-consumptive uses. Additionally, each SMP should be required to integrate land use and water planning.
- Current fish and wildlife habitat, as well as recreational opportunities, should not be diminished by future water uses: No new intra-basin transfers should be considered without an efficiency and conservation plan first funded and enacted. The Colorado Water Plan should reject all new trans-basin diversions (TBDs) unless the project proponent (a) is employing high levels of conservation; (b) demonstrates that water is available for the project; and (c) makes commitments that guarantee against environmental or economic harm to the basin of origin.
  - As such, we suggest that the CWP include a "no loss" statement that any transfer, and/or improvement to water infrastructure needs take in consideration of physical habitat that provides places for feeding, hiding, resting, and spawning for aquatic life. No improvement should decrease available aquatic habitat in Colorado.
- Incorporates bypass flows a useful tool for providing resource protection as required under federal law: The CPW should include language that supports

cooperation with federal agencies and encourages efforts to make the CWCB's instream flow program an effective alternative for federal resource protection responsibilities.

- Recognizes climate change and its impact son Colorado's fish and wildlife: While the CPW certainly does not have the ability to turn back the clock on climate change the Plan should recognize that climate change will have a negative impact on Colorado's endemic fish and wildlife. As such, the CPW should require that water uses consider the impact of climate change. The SMP's should also be required to assess and evaluate potential climate change impacts.

If we neglect the water need to keep the Colorado environment healthy, we are eliminating the very thing that makes Colorado so attractive to all its residents. Having a CPW that is sensitive to environmental health and Coloradans' favorite recreational pursuits is very important - we thank you for considering our comments and look forward to reviewing the final draft.

Sincerely,

Robert McCormack
President, Boulder Flycasters
PO Box 541
Boulder, CO 80306
cell-201-213-7295
troutrobert@gmail.com
Boulderflycasters.org

PUBLIC INPUT ITEM 97

Submitted on Wednesday, September 16, 2015 - 11:36

Submitted by anonymous user: [165.127.10.2]
Submitted values are:

First Name: crystal
Last Name: edmunds
Affiliation: peace corps
Email: crystalpistol42@gmail.com
Phone (Example: 000-000-0000): 4197793566

Cell Phone (Example: 000-000-0000):
River Basin: Gunnison

Constituent Group: General Public

Comments to be considered in Colorado's Water Plan:

Water Quality Standards_____
Arsenic
Perhaps my favorite part of working with the Western Hardrock Watershed Team was researching, following the process of and attending the April 2013 arsenic rulemaking at the Colorado Department of Public Health and Environment. Crested Butte is impaired for arsenic, partly from historic mining and partly from its geology. A major part of the work of the WHWT was to discern the significance of contamination to the watershed of arsenic from mining. I recognize this is an issue across the state.

I had first learned of arsenic through interning at Water For People in Denver: Three decades ago, health and development experts and local contractors dug millions of deep tube wells throughout Bangladesh, encouraging the whole nation to drink well water because it was deemed to be safe, free of the bacteria that causes water-borne diseases such as diarrhea and other intestinal maladies that have long plagued the country. However, in switching from rivers and other surface sources of water, the people of Bangladesh may have exchanged water-borne diseases for arsenic. In the 1970's public health specialists and government policy-makers were unaware of the problem. It was only in 1993 that "clean" well water was discovered to contain dangerous quantities of the metal. According to the World Health Organization, estimates of contamination vary from a low of 28 to 35 million to a high of 77 million—more than half the population of Bangladesh, one of the most crowded nations on the planet. It is estimated that over a million Indians are also drinking arsenic-laced water. Newer cases of arsenic poisoning in the Ganges Basin suggest that many of the region's 449 million

residents are at risk.

Arsenic is the number one environmental health concern worldwide-- and is ranked number one on the federal list of the top 275 most hazardous substances found at toxic waste sites. Exposure to high levels of the metal can cause cancers of the skin, bladder, kidney, and lung, and diseases of the blood vessels of the legs and feet, as well as possibly diabetes, high blood pressure, and reproductive disorders. It's also linked to kidney, nasal, liver and prostate cancers. The predominant cancer risk is through drinking water. Inconsistencies remain in the studies of arsenic carcinogenesis, but the main point is this: even though much remains to be learned about how arsenic causes cancer, there is no doubt that it does. If indeed arsenic is an endocrine disruptor as well as a silencer of cancer-protecting genes, then no safe level of exposure may exist.

This is incredibly relevant with the development of transportation and tapping into groundwater throughout the state-- as arsenic is found in bed rock, from which it can leach into groundwater or rise to the surface when coal or metal ores are mined. As a result of irrigation, arsenic is brought from the subsurface to the soil surface. An increase in arsenic concentration in the soil surface, as a result of irrigation, can detrimentally impact crop growth and is a source of entry of arsenic to the food chain. Ground-water resources currently supply approximately 18 percent of the state's needs and ground-water development is continuing at a fast pace. However, the technology does not exist to detect arsenic levels that EPA officials are pushing to reduce the standard to.

Boulder is the first in the state to have an arsenic effluent standard in its discharge permit; it has the in house capability to test for arsenic at low standards, while in prior years there were only two labs in the United States they were able to use for testing.

SUGGESTIONS FOR THE PLAN REGARDING ARSENIC CONTAMINATION

· Utilize Boulder's arsenic action plan as a model for the state: channel more funding to water treatment research and development, including ion exchange, reverse osmosis, and electric dialysis.
· Analyze construction dewatering rules statewide.
· Develop more methods of education on the Colorado Primary Drinking Water Regulations.
· Collaborate with Water for People on outreach!
· Get the public more involved in water quality stakeholder groups by the next rulemaking in 2016.

· Determine if there is substantial bioconcentration of arsenic occurring in Colorado's surface waters, and if so, determine the extent of this bioconcentration.

Fluoridation

"We make the mistake in reasoning that the fluorine in the water is the cause of the better teeth, when we should look to the presence of liberal amounts of the calcium-bearing and phosphorus-bearing apatite putting more calcium and more phosphorus in the foods at the same time that by decomposition it is putting fluorine into the water percolating down through the soil." - Dr. William A. Albrecht, Fluoridation of Public Drinking Water

Fluoridation was first advanced in the US at the end of the second World War, and it is now in about two thirds of the water supply in the US. Proponents argued that fluoride in water and toothpaste would help to protect teeth and prevent decay. Over the following decades, fluoride was added to public water supplies across the country. Fluoride is a key ingredient in industry used for making aluminum, steel, high-octane gasoline, and for enriching uranium. The real issue was in "greenwashing" the pollution from these industrial plants and pollution, as industries are responsible for potential damage for injuries to workers. A medical study commissioned by industry at the University Of Cincinnati in the 1950s showed that fluoride is profoundly injurious to lungs and lymph nodes in experimental animals. That study was buried. Today the fluorides that goes in our drinking water is almost exclusively raw industrial pollution from the Florida Phosphate Industry. It's a waste that's scrubbed from the smokestacks and trucked in tankers and dumped into reservoirs.

While the benefits of fluoridation have been held to be unquestionable, accumulating evidence points to a alternative prospect: that fluoride may have serious adverse health effects, including infant mortality, congenital defects and decreasing IQ[1]. Fluoride poisons enzymes; the halogen inhibits many enzymes by binding with the metal ions they require in order to function. It inhibits others by a direct poisoning action of their protein content. Fluoride also has a toxic effect on genes and gene function; research at the International Institute for the Study of Human Reproduction, Columbia University College of Physicians and Surgeons, as well as at the University of Missouri, has proved that fluoride is mutagenic, i.e. it damages genes in mammals at doses approximating those humans receive from artificial fluoridation exposure.

Fluoride is used by the body in a desperate attempt to replace iodine if the

body is deficient in iodine. Any person without proper iodine levels invites fluoride mimicking iodine. The body then attempts to utilize the fluoride as though it was iodine, always unsuccessfully. In the process, it shuts down all the clinical pathways to the thyroid. Fully 71 pathways, or enzymes, thus become annihilated. Enzyme construction and thyroxin utilization become the observed and measured results. Fluoride also has the capacity to bind lithium in the brain[2].

SUGGESTIONS FOR THE PLAN REGARDING FLUORIDATION

- End fluoridation of drinking water.

Mining_____

Outdated Mining Laws, Abandoned Mines

There are an estimated 500,000 abandoned hardrock mines in the West, according to Earthworks. The US Bureau of Mines estimates that 12,000 miles of the waterways of the Western US, or about 40 percent, are contaminated by metals from acid mine drainage, mostly by abandoned mines, while abandoned mine runoff continues to taint 180,000 acres of lakes. In Colorado, 2,751 abandoned mine sites have possible impacts on water quality in 20 watersheds. All too often, no viable financially responsible party exists for the abandoned mines. While the water quality in the vicinity of the mine continues to be impaired, no one can be held responsible for cleaning it up. Further, the General Mining Law of 1872 (GML) continues to regulate the extraction of hardrock minerals; according to Jane Danowitz, public lands director for the Pew Environment Group, in a New York Times interview, "This is a law that basically hasn't been changed in almost 140 years." As the GML allows mining companies to take approximately $1 billion annually in metals from public lands without payment of a royalty, funds for remediation efforts are not sufficient for the task.

While Superfund was developed to address abandoned hazardous waste sites when liable parties no longer exist or either cannot or will not undertake a cleanup, it too lacks the necessary funds. Under the Superfund law, the EPA was ordered to develop a list of more than 400 priority sites nationwide, at least one in each state. The agency soon recognized that the scope of the problem was much larger, estimating that 2,000 sites would ultimately be included on the National Priorities List. In 1985, as the original legislation was about to expire, the now disbanded Office of Technology Assessment (OTA) issued its report—Superfund Strategy—which concluded that the magnitude of the hazardous waste problem was much larger than most lawmakers had envisioned. According to the OTA, the number of sites could

mushroom to more than 10,000, requiring cleanup efforts over a span of perhaps 50 years. The report estimated that costs borne by Superfund could reach $100 billion and that overall costs to the nation could total several times that amount. The Superfund program has in past received funding from two sources: general funds from the Treasury and balances in the Superfund trust fund. In earlier years, revenues for the trust fund came from three dedicated excise taxes and an environmental corporate income tax. Those taxes expired in December 1995, and the amount of unobligated money in the fund declined to zero by the end of FY2003. The program is currently charged with the cleanup of nearly 1,300 hazardous waste sites across the country; one in four Americans live within three miles of a contaminated site posing serious risks to human health and the environment, according to the EPA.

For those concerned with job creation, think of how many jobs we can create through environmental remediation efforts from historic mining and beyond. The economic crash and crisis of the past years can be transformed into a catalyst for a new economic paradigm-- an economy that is not based off of 70 percent consumption, but creative thought, the health of the environment and subsequent biodiversity.

Fracking

Before fracking much of Colorado, we collectively need to analyze the environmental, economic and social impacts from historic mining to understand fracking's potential ramifications. Over half of all the shale gas ever developed in the world has been produced in the last three years, which has resulted in nearly all of the peer-reviewed scientific research on the environmental and public health consequences of shale gas having been done in the last year and a half. Environmental regulation remains incomplete. The hydraulic fracturing process itself is exempt from seven major federal regulations:

- The Clean Water Act and Safe Water Drinking Act: The Safe Drinking Water Act's Underground Injection Control program protects underground sources of drinking water from contamination by injected fluids. In 2005 the Energy Policy Act amended the Safe Drinking Water Act to exclude hydraulic fracturing from the definition of "underground injection.";
- the Resource Conservation and Recovery Act, which has exempted all oil and gas exploration and production wastes from federal regulations pertaining to hazardous waste since 1988;
- the Superfund law, which requires that polluters remediate for carcinogens like benzene released into the environment, except if they come from oil or gas;
- the Comprehensive Environmental Response, Compensation, and Liability

Act, which excludes parties involved in oil or natural gas that have contributed to environmental mess from legal responsibility for the cost of cleaning it up. CERCLA excludes oil and gas products and any chemicals contained in them (unless otherwise regulated);

- the National Environmental Policy Act, which requires government agencies to consider the environmental impact of their actions, and requires public comment and evaluation of alternatives through an environmental impact statement process when a significant impact is likely. The 2005 Energy Policy Act created a categorical exclusion for some types of oil or gas well expansions, allowing them to occur with limited review. The public now has to prove significant harm to challenge anything on the basis of NEPA violations.
- the Toxic Release Inventory under the Emergency Planning and Community Right-to-Know Act, which the oil and gas industry is exempt from reporting releases of toxic materials in the Toxic Release Inventory.
- the Clean Air Act, which requires the EPA to list major and clustered minor categories of sources of air pollution, but has not included wells or fields allowing operators to avoid emissions controls standards.

In the past year, Colorado, Texas and Pennsylvania have moved to tighten state regulations and require mandatory disclosure of what's in the fracking fluids, but loopholes still remain. "We don't know the chemicals that are involved," Vikas Kapil, chief medical officer at the National Center for Environmental Health, admitted at a recent conference.

"We don't have a great handle on the toxicology of fracking chemicals." Dr. Theo Colburn of the Endocrine Disruption Exchange has spearheaded research on the toxicology of fracking chemicals, paying particular mindfulness to endocrine disruption. Endocrine-driven disorders include ADD and autism. She noted in a 2010 Democracy Now interview that 944 chemicals are used in natural gas extraction, and that we know between 95 and 100 percent of about 14 percent of the chemicals that are being used, and nothing is known about 43 percent of the products in use. Shale gas development has already caused significant surface water pollution. Fracking fluids extract chemical substances from shales, including toxic and carcinogenic aromatic hydrocarbons, toxic metals, and radioactive materials. Some of these materials are released to the environment when blowouts and other accidents occur. A greater route of release and exposure comes from disposal of frac-return fluids. Approximately 20 percent of the material used in hydraulic fracturing flows back to the surface in the first few weeks after fracturing with all of the added and extracted chemical substances.

Rare Earth Elements

US Rare Earths said in a release that it has staked additional claims in the area beyond its 4,000-acre holding Colorado's Powderhorn mineral belts. Thorium has been found since 1949 in at least 33 deposits in an area six miles wide and 20 miles long in the Powderhorn district, Gunnison, CO; the district has long been known for its alkalic igneous rocks, of which the best known are those of the Iron Hill composite stock. The district is drained by three northward-flowing tributaries of the Gunnison River: Willow Creek, Cebolla Creek, and the Lake Fork of the Gunnison.

US Representative Hank Johnson reintroduced the Resource Assessment of Rare Earths (RARE) Act of 2013 to Congress in March 2013. It is a bill aimed at securing rare earth supplies and reducing China's monopoly on the market. RARE directs the United States Geological Survey (USGS) to conduct a three-year, comprehensive global mineral assessment of rare earth elements (REEs). The USGS global assessment, conducted with geological surveys of partner nations around the world, will identify and quantify individual rare earth elements in known deposits, improve understanding of the distribution and formation of rare earth element deposits, assess likely undiscovered deposits worldwide, analyze the state of the complete rare earths supply chain from mining to manufacturing, and recommend further research and steps to improve our understanding and ensure access.

SUGGESTIONS FOR THE PLAN REGARDING FRACKING, ABANDONED MINES, OUTDATED MINING LEGISLATION AND THE MINING OF RARE EARTH ELEMENTS

- Clarify potential disposal options for wastewater and other wastes containing radioactivity.
- Encourage congressional members to pass General Mining Law reform, the Good Samaritan Law, the federal budget with the hardrock mining language intact, reinstating Superfund taxes-- and demanding parallel regulations and taxation for the hydraulic fracturing industry.
- Push legislation that would allow western states to tap federal funds earmarked for coal mine clean-up and use them to address safety and environmental issues at abandoned hard rock mining sites instead.
  - In Colorado, the law's passage would mean that the Division of Reclamation, Mining and Safety would be able to afford to take on approximately 100 additional projects annually for the next few years.
- Support further studies on radioactivity before allowing rare earth element and uranium mining.
- Regulate the hydraulic fracturing process under the follows laws and acts:
  - The Clean Water Act and Safe Water Drinking Act;
  - the Resource Conservation and Recovery Act;

- the Superfund law;
- the Comprehensive Environmental Response, Compensation, and Liability Act;
- the National Environmental Policy Act;
- the Toxic Release Inventory under the Emergency Planning and Community Right-to-Know Act;
- and the Clean Air Act.

Agriculture_____

Fertilizers & Pesticides in Agriculture and Weed Control

The recent algal bloom crisis in Toledo warms us of the harms of excess nitrogen and fertilizer-- it also debunks the no-till, nitrogen and phosphorus fertilizer-heavy, mono-culture agricultural paradigms perpetuated by Cargill, Monsanto and the like.

Nutrients

Nutrient pollution from fertilizers is a leading cause of degradation of U.S. water quality, and nitrogen and phosphorus are the nutrient culprits. While it has been discussed at the national and state levels for many years, nutrient pollution is difficult to define and address because of the widespread use of fertilizers in agriculture and landscaping. According to the National Academy of Sciences, even though farmers use pesticides more widely, homeowners use 10 times more fertilizer per acre. Treated sewage is also a major contributor of nutrient pollution.

Nitrogen and phosphorus together support the growth of algae and aquatic plants, which provide food and habitat for aquatic life. However, excess nitrogen and phosphorus in aquatic systems can stimulate over- production of biomass, leading to changes in biological integrity. Harmful algal blooms negatively impact the food web by decreasing the amount of nutritious, edible phytoplankton that zooplankton and other primary consumers need to survive. These organisms may then starve, leading to decreased food for higher order consumers such as fish. Harmful algal blooms can block sunlight from phytoplankton under the water's surface, leading to decreased food and oxygen levels. When harmful algal blooms begin to break down and die, they can decrease dissolved oxygen levels, a change that can be lethal to other aquatic organisms and cause fish kills. The toxins produced by harmful algal blooms are a concern for human health-- they are possible carcinogens to humans, and current research is studying the link between certain cyanobacterial toxins and neurological diseases such as Lou Gehrig's disease. The most common toxin is called microcystins. There are at least 60 different types of microcystins, and their toxicity can vary significantly.

The WHO standard for microcystin-LR in drinking water is 1.0µg/L, but there are no similar standards for waters in the United States.

Toxins of mycrocystins:
Toxin Types
Examples
Effects
Neurotoxins
Anatoxin-a, anatoxin-a(s), saxitoxin, neosaxitoxin
Affects central nervous system, causes seizures, paralysis, respiratory failure, and death
Hepatotoxins
Microcystins, nodularins, cylindrospermopsin
Affects liver, causes hemorrhaging, tissue damage, tumors, liver cancer, and death
Dermatotoxins and Gastrointestinal toxins
Aplysiatoxins, lyngbyatoxin-a, lipopolysaccharide endotoxins
Affects skin and mucous membranes, causes rashes, respiratory illness, headache, and stomach upset
Cytotoxins
Cylindrospermopsin
Affects liver and other organs; causes chromosome loss, DNA strand breakage, and organ damage
I am thankful that in March 2012, Colorado passed new rules to tackle nutrient pollution, yet disappointed that agriculture is not be regulated. Agriculture remains the main source of nutrients; it would be very wise for Colorado's Water Plan to make this amendment.

German scientist Justus Von Liebig was responsible for the theory that Nitrogen, Phosphorous, and Potassium levels are the basis for determining healthy plant growth. However, this theory, which dates to the 1800s, doesn't take into account the dozens of other nutrients and elements that are essential to plant growth such as sulfur, hydrogen, oxygen, carbon, magnesium, etc. Nor does the theory talk about the importance of beneficial soil organisms that help plants fight off pests and diseases[3]. In fact, elements such as carbon, hydrogen, oxygen, sulfur, magnesium, copper, cobalt, sodium, boron, molybdenum, and zinc are just as important to plant development as N-P-K[4].

o People who depend on rural, private wells for their water source have one of the higher rates of a condition called Methemoglobinemia, aka Blue Baby Syndrome, which damages blood cells and is traced to high Nitrates[5].

o Reactive nitrogen increases atmospheric ozone levels, causing respiratory diseases and hurting crop yields and produces acid rain. To top it off, oceanic nitrogen is converted to nitrous oxide, a greenhouse gas[6].
o The kind of nitrogen typically found in chemical fertilizers dissolves very quickly in water. This means that excess nitrogen may find its way into groundwater and freshwater sources and contaminate the water. Additionally, many chemical fertilizers are now using phosphoric acid to create a high phosphorous content quickly and cheaply; this kind of phosphorous essentially neutralizes other important trace minerals from the soil that plants need.

According to Sandra Steinberger's "Raising Elijah," in 2009, nitrogen fertilizer was used on nearly all conventionally grown durum wheat, 94 percent of other spring wheat, and 83 percent of winter wheat. In 2009, 2,968,000,000 pounds of nitrogen fertilizer were used to grow America's wheat in 2009. Almost all of these nearly three billion pounds were created from natural gas. Five percent of global natural gas reserves is turned into nitrogen fertilizer-- all by itself, the United States consumes 2.2 billion pounds of nitrogen fertilizer a year. Do we really want the whole world's agricultural system to ride a tandem bicycle with the oil and gas industry? Further, a 2010 health ranking study undertaken by the Robert Wood Johnson Foundation showed that some of the least healthy counties in the US are located in bumper crop regions. And yet, for many of these counties, the list of their underlying problems include the phrase: "lacks access to healthy, affordable food."

Pesticides

The first systematic comparison of pesticide residues in organic and nonorganic foods was carried out in 2002. Examining the data from more than 90,000 samples of produce, the authors of this study found that nearly three-quarters conventionally grown foods had detectable pesticide residues. Three quarters of organic crops had none. Organophosphates block the action of an enzyme that regulates a neurotransmitter and are thus brain poisons. Assessing the power of pesticides to influence children's hormones is the part of the job mandated by the Food Quality Protection Act-- though it is not yet done, even though the EPA was originally given a 1999 deadline.

· 2, 4-D is an herbicide that has been linked with birth defects.
· Chlorpyrifos is an organophosphate that has been linked to cognitive deficits in children. Emerging evidence also links it to autism. Organophosphate pesticides in particular can induce spasms in bronchial tubes and contribute to airway hyperactivity by altering the functioning of nerves that supply the muscles of the airways. Organophosphates interfere with the

recycling of the neurotransmitter acetylcholine, one of the messaging signals that flow between neurons.

· The second most common pesticide used in the US, atrazine, enhances the production of an enzyme called aromatase, which is used by the body to convert testosterone into estrogen. The end result is higher estrogen levels. Like children, amphibians are uniquely sensitive to pesticides. Trace exposure to the weed killer atrazine has been found to emasculate male tadpoles-- in a recent study, male frogs exposed to atrazine turned into fully functional females that mated with males and produced eggs. According to researchers at the National Institute for Environmental Health Sciences, 60 percent of Americans are exposed, mostly through drinking water, to atrazine. In 2006, in spite of the remaining uncertainties of atrazine's health effects, atrazine was banned for use in the European Union. Along with phthalates, PCBs, and air pollution, atrazine appears on the list of chemicals with demonstrable links to shorter pregnancy and lower birth weights.

There is no national pesticide registry in the US. Farmers are not required-- as are manufacturers-- to report their chemical releases.

In a 2007 study, a team of biologists at the University of Michigan concluded that legumaceous cover crops could fix enough nitrogen to replace all the fossil-fuel derived fertilizer now in use. Thus, they dispute the idea that organic agriculture is constrained by lack of nitrogen. More centrally, the same research team disputes the evidence that organic farming suffers from lower yields. In a review of 293 studies that compared yields of organic and conventional farms in both developed and developing nations, researchers found parity. In the US, yields on organic farms were about 92 percent of the yields produced by conventional agriculture, whereas in developing countries, yields were actually higher. Organic farming prohibits the use of synthetic pesticides. Organic acres still only account for 0.7 percent of total US crop acreage. Of US cows, 2.7 percent are raised organically. Of US egg-laying hens, 1.5 percent are raised organically. In essence, organic agriculture is a form of farming that replaces synthetic chemicals with ecosystem services. Organic agriculture sows the seeds of its own preservation.

Weed Control

I am calling for an alternative approach to noxious weed management; the new field of ecology, invasion biology, sprang forth from Charles Eton in just 1958. Seen from a different perspective, the development termed "invasion" could also be described as vegetation dynamic or successional change that is a natural process of plant species and ecosystems to deal with disruptions

and openings. In addition to widespread physical alterations to landscapes, massive upheavals to ecosystems occur from contamination by numerous invisible pollutants that have leached into the water, soil, and air. In such disturbed ecosystems, many of the native plants are poisoned and are less able to deal with upheaval, but the weedy, invasive plants cope well and even flourish in the toxic surroundings. For example, Canada thistle, bindweed, leafy spurge, sowthistle, knapweed, and yellow star thistle displayed a significant growth response (110 percent) to increasing CO2 levels during the twentieth century, with the growth anticipated to be an additional 46 percent over the next 100 years. Overused and depleted rangelands are the areas most in need of thistle; it keeps foraging cattle from such lands and discourages farmers with its virulence. Thistle's roots aerate the generally hard soil of improperly managed rangeland, and over time, the plant increases biomass to restore and conserve the topsoil from blowing away.

By the dawn of the twentieth century, laws were passed by the US Congress to control the plants that impeded the progress of the great agricultural machine. The regulations started with the Lacey Act of 1900, follow by the Plant Pest Act, the Plant Quarantine Act, and the General Noxious Weed Act of 1974, in which were targeted plants that "can directly or indirectly injure crops, other useful plants, livestock, poultry, or other interests of agriculture, including irrigation, navigation, fish and wildlife resources, or the public health. Cornell University claims that each year the US spends 34.7 billion dollars in fighting noxious weeds[7].

SUGGESTIONS FOR THE PLAN REGARDING AGRICULTURE, NUTRIENT POLLUTION & PESTICIDE USE

- Support organic agriculture.
- Support perennial grain production.
- Regulate agriculture for nutrient pollution, eventually discontinuing use of synthetic fertilizers as well as nitrogen and phosphorus rich fertilizers-- -- opting instead for legumaceous cover crops to fix nitrogen.
- Support studies of growing hemp to absorb excess nutrients.
- Support research of mycrocystins.
- Develop a standard for microcystin-LR in drinking water.
- Develop mandatory testing of algal-bloom heavy areas for mycrocystins. Thus, support new technologies to monitor pollution levels in the environment. EPA is studying innovative technologies that will measure nutrient pollution in the air and water using satellites, portable and ground remote sensors as well as measurement and model data. These technologies enhance current monitoring activities and also provide cheaper and faster

information on nutrients and other pollutants.

· Oregon and Washington in the U. S. have fertilizer registration programs with on-line databases listing chemical analyses of fertilizers--create the same in Colorado.

· Create a functioning endocrine-screening program, with validated protocols, as mandated by the 1996 legislation.

Chemical Regulation

According to Sandra Steinberger's "Raising Elijah: Protecting our children in the age of environmental crisis," only 200 of the more than 80,000 synthetic chemicals used in the United States have been tested under the Toxic Control Substances Act of 1976, and exactly none of them are regulated on the basis of their potential to affect infant or child development. Current laws do not require the screening of chemicals for their ability to damage or alter pathways of brain growth, and only about 20 percent of the 3,000 chemicals produced in high volume in the US have been tested for developmental or pediatric effects. Further, of the 300-odd chemicals that are presumed ingredients of fracking fluid, 40 percent are endocrine disruptors and a third are suspected carcinogens. A third are developmental toxicants. Over 60 percent can harm the brain and nervous system.

SUGGESTIONS FOR THE PLAN REGARDING CHEMICAL REGULATION

· Provide support for the Toxic Chemical Safety Act. Chemical reform should be based on the precautionary principle.

Education

According to the National Environmental Education Foundation, the average American adult, regardless of age, income, or level of education, mostly fails to grasp essential aspects of environmental science, important cause/effect relationships, or even basic concepts such as runoff pollution, power generation and fuel use, or water flow patterns. For example, about 80 percent of Americans are heavily influenced by incorrect or outdated environmental myths; just 12 percent of American can pass a basic quiz on awareness of energy topics.

Further, NEEF asserts that national studies indicate that 47 percent of all natural resource agency field staff and 77 percent of all leadership staff are expected to retire by 2015, leaving a void in outdoor and science positions in Colorado and across the nation. Nearly one third of children in Colorado live in neighborhoods without a park, playground, recreation center, trail, or other safe place to play. Thus, in addition to environmental

literacy, Colorado schools and community providers must promote outdoor recreation, such as hunting, fishing, archery and adventure education, to ensure all Coloradoan students have the opportunity to foster connections and routines in the outdoors. Colorado teachers and students have worked on wetland creations, xeriscaping, windbreaks, nature trails and urban wildfire habitat projects around their schools.

Professional environmental educators often give short shrift to the media. But children get more environmental information (83 percent) from the media than from any other source. For most adults, the media is the only steady source of environmental information.

SUGGESTIONS FOR THE PLAN REGARDING ENVIRONMENTAL EDUCATION

- Set a goal that a greater number of Colorado Schools become U.S. Department of Education Green Ribbon Schools (ED-GRS) in Colorado. Typical characteristics of these award-winning schools is that they exercise a comprehensive approach to creating "green" environments through reducing environmental impact, promoting health, and ensuring a high-quality environmental and outdoor education to prepare students with the 21st century skills and sustainability concepts needed in the growing global economy.
- Encourage environmental education partnerships with the media.
- Support experiential learning and school gardens.

PUBLIC INPUT ITEM 98

City of Fort Collins

Utilities
electric · stormwater · wastewater · water
700 Wood Street
PO Box 580
Fort Collins, CO 80522

970.221.6700
970.221.6619 – fax
utilities@fcgov.com
fcgov.com/utilities

September 15, 2015

Colorado Water Conservation Board
c/o James Eklund, Director
1313 Sherman Street, Room 721
Denver, Colorado 80203
Via email: cowaterplan@state.co.us

Re: Fort Collins Utilities' Comments re Second Draft of the Colorado Water Plan

Dear Mr. Eklund:

I am writing on behalf of the City of Fort Collins Water, Wastewater, and Stormwater Utilities (together "Fort Collins Utilities") in response to a request for comments to the second draft of the Colorado Water Plan ("Plan"). Fort Collins Utilities appreciates the opportunity to provide comments to the Plan.

Fort Collins Utilities is generally supportive of the Plan's objectives to meet Colorado's municipal, agricultural, environmental, recreational, and water quality management water needs. To address Colorado's municipal needs, the Plan calls for 1) decreasing demands by utilizing conservation, 2) increasing supplies by implementing balanced multi-purpose projects and 3) protecting against drought by developing plans and supply reserves.

These strategies are consistent with those stated in the Fort Collins Utilities' Water Supply and Demand Management Policy.[1] Fort Collins Utilities strongly supports the implementation of conservation strategies and has had great success in reducing per capita water use.[2] To meet the anticipated increase in water demand due to future population growth, as well as to provide drought protection and storage reserves for emergency water shortages (e.g., pipeline failures), Fort Collins Utilities is pursuing the Halligan Water Supply Project.[3] This is one of the projects identified in the Plan to assist in meeting the state-wide projected shortage between the anticipated 2050 available supplies and demands ("the gap"). Once completed, the Halligan Water Supply Project is expected to meet the Fort Collins Utilities' water supply needs through 2065, which include providing a

[1] The policy is available at http://www.fcgov.com/utilities/img/site_specific/uploads/wsdm-policy.pdf.
[2] For more information, please see http://www.fcgov.com/utilities/conserve.
[3] For more information, please see http://www.fcgov.com/utilities/what-we-do/water/halligan-water-supply-project.

reliable supply through a 1-in-50 year type drought and provide a storage reserve. Given the uncertainties of climate change and other potential factors that may reduce available supplies in the future, Fort Collins Utilities will continue its focus on water demand management through implementation of its Water Efficiency Plan. In addition, Fort Collins Utilities believes that additional water conservation is critical to lessening its environmental impact to the State's rivers. Through additional water storage and increased focus on water conservation that are supported through the Plan, Fort Collins Utilities should have a sustainable water future.

Given the experience of working through the various permitting processes for the development of the Halligan Water Supply Project, Fort Collins Utilities is very supportive of the concept of more integration between the various Federal, State and local agencies involved in these processes as described in Section 9.4 of the Plan. Fort Collins Utilities believes this integration could be further enhanced through better support and guidance for the various State agencies to be prepared for analyzing these projects to avoid potential delays to water supply projects.

Though not expressly addressed in the Plan, Fort Collins Utilities is also concerned with some of the recent positions that the State Division of Water Resources ("DWR") has taken with regard to changes of water rights in Water Court cases and related proceedings. Such positions could potentially make meeting the State's future water supply needs more costly and difficult while also having other policy implications that are contrary to those expressed in the Plan. For example, despite widespread and near unanimous opposition from water users, the DWR took the position that previously quantified and changed water rights are subject to requantification in subsequent change of water right cases. *E.g., Wolfe v. Sedalia Water & Sanitation Dist.*, 343 P.3d 16 (Colo. 2015). This position has various negative effects, such as reducing the yield of those previously changed water rights, making water rights planning more difficult, and forcing water users relying on such water rights to change more water rights from irrigation to municipal uses (and to consequently dry up more agricultural lands). The Legislature's passage of Senate Bill 2015-183 ultimately quashed this position of the DWR. However, the DWR has taken other positions with similar negative implications. For instance, there are many ditch systems where some of the water rights have been changed in previous cases and water users seek to rely on the previous analyses to change more water rights in the ditch system. However, the DWR has taken various positions that make the reliance on the previous analyses in Water Court extremely difficult that increases costs and uncertainty and reduces yields, as discussed above. These policies also creates incentives for water users to not change the last remaining irrigation water rights on ditch systems where little agriculture continues (such as those in now mainly urban areas), but to instead acquire and change water rights on, and ultimately dry up highly productive agricultural land. In short, existing water rights may be able to help meet the gap more so than set forth in the Plan, and the DWR may be able to facilitate their use by not taking the types of positions described above. These types of issues do not appear to

be addressed in the Plan and Fort Collins Utilities believes the Plan could be enhanced if they are addressed.

Fort Collins Utilities notes an error in Section 2.4 (page 26) of the Plan, which states that the Colorado Attorney General is "the legal authority regarding matters of law, including whether or not a particular project or agreement is legal under Colorado law." The Colorado Attorney General does not have powers beyond those granted by the Legislature. *People ex rel. Tooley v. Dist. Court*, 549 P.2d 774, 190 Colo. 486 (1976). By statute, in addition to other specified duties, the Colorado Attorney General is the legal counsel and advisor for each department, division, board, bureau, and agency of the State of Colorado other than the legislative branch. C.R.S. §24-31-101(1)(a). The Colorado Attorney General represents the State and its positions. *E.g., Simpson v. Bijou Irrigation Co.*, 69 P.3d 50 (Colo. 2003). However, Colorado courts are the authorities regarding whether or not a particular project or agreement is legal under Colorado law. *E.g.,* Colo. Const. Art. VI, §1; *Dixon v. People ex rel. Elliott*, 127 P. 930, 932 (Colo. 1912); C.R.S. §37-92-203(1); *In re Tonko*, 154 P.3d 397, 404 (Colo. 2007). Fort Collins Utilities appreciates the work and challenging role of the Colorado Attorney General. Nevertheless, this aspect of the Plan should be corrected to avoid any misunderstandings regarding the role of the Colorado Attorney General.

Fort Collins Utilities also notes that Section 6.3.2 (page 174) of the Plan needs to be reworded to reflect that Regulation 86 of the Colorado Department of Public Health and Environment's Water Quality Control Division (regarding graywater use) has already been developed, adopted, and has been in effect as of June 30, 2015. The Plan refers to this as a task still needing completion.

Fort Collins Utilities shares many of the same challenges faced by other Colorado water users and appreciates the water needs of agricultural, environmental, and recreational entities as well. Uncertainties exist for Colorado water users regarding climate change and its impact on future water supplies. As a result, there will be more pressure placed on the State's water resources in the coming years that will require increased cooperation among entities to creatively address these challenges. The Plan recognizes and provides strategies for addressing these challenges and Fort Collins Utilities appreciates the opportunity to provide these comments.

Sincerely,

Kevin R. Gertig
Fort Collins Utilities Executive Director

cc: Carol Webb, Water Resources and Treatment Operations Manager
Donnie Dustin, P.E., Water Resources Manager
Joe Frank, Chair, South Platte Basin Roundtable, via email: jmfrank@lspwcd.org

PUBLIC INPUT ITEM 99

Hattie Johnson

lifestyle to me is one of the outdoors. I am constantly inspired by the energy Colorado residents show for being outside. Our water and rivers drives so much of that energy. I moved to Colorado to enjoy the rivers for a summer and turned out making it my home of four years now and working in the water industry with a river engineering firm. With this job I have learned so much more about the expansive issues attached to water in Colorado and truly am inspired and appreciative of the work that has been done on the Water Plan. Living in the Roaring Fork Valley I am lucky to enjoy three of Colorado's most beautiful rivers any day of the week. Having water in those rivers and being able to recreate on them almost year round is truly special. The recreational value of these rivers seems to be somewhat overlooked in the current Plan.

I am encouraged that the Plan recognize many of the values that I hope we preserve for all Coloradoans:
- A productive economy that supports vibrant and sustainable cities, viable and productive agriculture, and a robust skiing, recreation, and tourism industry;
- Efficient and effective water infrastructure; and
- A healthy environment that includes healthy watershed, river, streams, and wildlife.

As we grow, how we grow is extremely important. Every basin talks about storage and I hope that state endorsement for every future water project is not automatic. The Colorado Water Plan needs common-sense criteria for future water projects and water management so that we grow smart.

Recreational water needs are currently overlooked and under-evaluated in the Plan. I ask that the State show leadership in assigning Roundtables a specific set of metrics for development, and that the state partner with stakeholders like American Whitewater to assess demands for recreation - both in defining flows that support recreational opportunities, and in developing a quantitative baseline for assessing the impact or enhancement to recreation from any future project. Currently, only the Yampa and Colorado river basins are pursuing appropriate metrics (boatable days). Until each Basin, and the State develop a common set of metrics for evaluating recreational values, and apply these metrics consistently to local stream, basin, and trans-basin planning, the Colorado Water Plan will not reach its full potential

River based recreation, including fishing, boating, and the enjoyment of healthy riparian areas for hiking, picnicking and camping, is a core part of this economy – all which the draft Colorado Water Plan recognizes. However, the Plan does not address the economic impact of river-based recreation to the State economy, and I encourage the CWCB to honor the recreational value of water by studying and reporting economic impact data by Sector, including Recreation.

While many of the States programs help meet recreational water demands, and protect them in priority, I would ask the Colorado Water Conservation Board to support legislation to allow a Recreational In-Channel Diversion right to protect boating flows for a segment of river using a stream gage, rather than a control structure as currently required under state law. This simple change would more easily align RICD rights with other water demands, like Endangered Species recovery programs and In-Stream Flows, and help eliminate some of the environmental concerns with building concrete structures in our rivers.

Whether any reach of stream in Colorado has any recreational needs or protections (ex. ISF or RICDs), the public's legal rights to recreate on those streams in not fully recognized by state law. The Colorado Water Plan and the Governors' Executive Order offer a great opportunity to

clarify the public's rights to recreate on our streams and rivers, and to align the activities of CWCB with those of Colorado State Parks, Department of Outdoor Recreation Industry, and local tourism offices to protect both sufficient flows and provide safe access to high-value recreational streams.

Lastly, as our population grows, please increase funding and scope for water stewardship education. Much of the public is not aware of the magnitude of our water challenges. As a paddler, I have a direct and intimate connection with water, and I would like to change the culture and our relationship with water through comprehensive education and experience. Our often overworked rivers support so much, and yet provide priceless opportunities for self-improvement, personal challenge, and quiet contemplation. Every Coloradan must understand the value of water, not just the cost.

Thank you for your efforts in creating our Colorado Water Plan and for the opportunity to comment in this collaborative process.

Hattie Johnson, Landscape Designer
RiverRestoration.org
O: 970.947.9568
C: 770.490.1271

PUBLIC INPUT ITEM 100

DELTA COUNTY, COLORADO

BOARD OF COUNTY COMMISSIONERS

COUNTY COURTHOUSE • 501 PALMER STREET • SUITE 227 • DELTA • COLORADO • 81416-1796

PHONE: (970) 874-2100 FAX: (970) 874-2114

www.deltacounty.com

Dist. 1: C. Douglas Atchley - Dist. 2: C. Bruce Hovde - Dist. 3: J. Mark Roeber

October 10, 2014

Colorado Water Conservation Board

Gunnison Basin Roundtable

Colorado River Basin Roundtable

RE: Delta County Comments on Draft Colorado Water Plan

Dear Colorado Water Conservation Board:

Delta County's economic resiliency is integrally tied to the ability to utilize water for agriculture, recreation and industry. This resiliency is dependent on the water rights in Delta County that date back to the early 1900's and these senior water rights must be fully protected in the development of the Draft Colorado Water Plan.

Delta County is fully supportive of the Gunnison Basin Roundtable's stance on protecting current and historical uses, including agricultural and municipal needs.

Storage improvements, expansion projects, new storage projects and renovations to our existing and aging water storage infrastructure need to be considered for all of Colorado to meet future water demands. Recreation is important to our existing economy and just like in the past water projects can be built to accommodate both agriculture and recreation.

Sincerely,
Delta Board of County Commissioners

C. Bruce Hovde, Chairman | **J. Mark Roeber, Vice Chairman** | **C. Douglas Atchley, Commissioner**

PUBLIC INPUT ITEM 101

September 15, 2015

Urgent Public Comments For:

Governor John Hickenlooper and Special Water Advisor John Stulp
Colorado Water Conservation Board (CWCB)
Colorado Inter-basin Compact Committee (IBCC)
Colorado's Basin Roundtable Chairs and Members
Colorado Water Resources and Power Development Authority (CWRPDA)
Colorado Governor's Energy Office
Colorado Senate and House Leaders and Members
Colorado Congressional Delegation
Colorado State Auditor

Subject: Colorado's fatally flawed 2nd Draft Colorado Water Plan

Hoover Dam was conceived, designed, and constructed by U. S. Bureau of Reclamation engineers within four years. Our nation won World War 2 in five years. Regrettably, because of territorial infighting, Colorado is the only western state that has never completed a viable State Water Plan to guide development of its vital interstate water entitlements for current and future generations, as clearly required by Colorado Water Conservation Board's 1937 Legislative Charter.

Governor Hickenlooper's farsighted May 14, 2013 Executive Order directing the Colorado Water Conservation Board to complete a **Final Colorado Water Plan** by December 10, 2015 was a long overdue and politically courageous act of leadership for our great state. However, because of endless inter-basin conflicts between Colorado's water rich West Slope and water short East Slope, CWCB's 2nd Draft Colorado Water Plan is improperly limited to several harmful alternatives and concepts to dry up Eastern Colorado farms and environments for Front Range growth. (See attached ***Colorado's unanswered water planning questions,*** *dated August 27 and September 6, 2015.)*

In view of Colorado's continuing statewide water planning failures, I respectfully request a one year extension of time for Colorado's water planners to properly evaluate our state's most promising trans-mountain alternatives for both sides of the Continental Divide.

These evaluations would include detailed modeling of Central Colorado Project's (CCP) unprecedented high altitude pumped water and energy storage solutions throughout five major southwestern river basins, *(Gunnison, Colorado, South Platte, Arkansas, and Rio Grande*) and the western power grid.

Modeling will quickly confirm annual net profits from CCP's high value peaking power operations for western blackout protection capabilities can also be used to provide assured, lower cost, water supplies throughout Colorado and its downriver states on both sides of the Continental Divide. With CCP, Colorado's farms and environments would be permanently enhanced, instead of harmed, under extreme drought, growth, and climate change conditions. CCP's surplus revenues could also be used for urgent local, state, and regional forest fire and flood control needs.

Thank you for considering Central Colorado Project and other innovative, but ignored, high altitude pumped water and energy storage solutions for Colorado and its downriver states.

Allen D. (Dave) Miller, ADM B. S. Business, Univ. of Colorado, 1954; M. S. Transportation, Univ. of Tenn., 1963; Active U. S. Air Force Air Mobility Innovator 1954-1974; Retired Air Force Colonel, and active Western water and energy innovator since 1974; 719-481-2003 Fax 719-481-3452; P. O. Box 567, Palmer Lake, CO 80133
centralcoloradoproject@comcast.net www.centralcoloradoproject.us

Enclosures: Colorado's unanswered water planning questions, dated August 27, and September 8, 2015, with enclosures.

Cc: Western Governors; The White House; Secretaries of Agriculture, Interior, Energy, and Army; USBR; USACOE; EPA; Congressional Natural Resources Committees; selected local, state, western, national, and International leaders.

August 27, 2015

Colorado's unanswered water planning questions

Colorado's economic and environmental futures are in serious jeopardy, because of continuing failures to ask and objectively answer the following basic water planning questions:

As the primary headwater state and water source for our nation's arid Southwestern Region, why are Colorado's escalating water shortages, user costs, and farm dry-up rates now among the highest of all western states?

Why is Colorado the only western state that has never formulated and maintained a professional State Water Plan to guide development of its vital interstate water entitlements for current and future generations, as originally directed by Colorado Water Conservation Board's *(CWCB)* 1937 Legislative Charter?

After twelve years of collaborative water planning with a multi-million dollar Statewide Water Supply Initiative *(SWSI)*, and two years after Governor Hickenlooper's Executive Order to create our state's first Colorado Water Plan, why has CWCB's 410 page Second Draft Colorado Water Plan failed to include recent evaluations of three conventional trans-mountain diversion (TMD) alternatives *(Big Straw, Flaming Gorge, and Yampa)* for Colorado's state-wide water needs?

Why is CWCB's Second Draft Colorado Water Plan promoting high cost and harmful trans-mountain reuse-to-extinction projects for Front Range growth? *Note: Aurora's Prairie Waters Project, Colorado Springs' Southern Delivery System (SDS), and South Metro Denver's Water Infrastructure Supply Efficiency Project (WISE) will substantially increase Front Range water user costs, escalate dry-up of Eastern Colorado farms and environments, and continue to risk permanent loss of Colorado's vast undeveloped and unused legal share of the Colorado River.*

Why is Colorado the only western state trying to develop and maintain a meaningful State Water Plan with nine Basin Roundtables, manned by local, non-professional volunteers? *Note: Some of these local planners have serious conflicts of interest as major land and water owners/brokers/speculators, as well as advisors for numerous state funded water studies.*

How can Colorado's leaders expect a meaningful, consensus-building, Colorado Water Plan from five Eastern Colorado Roundtables, representing 85% of our state's population and agriculture vs. four Western Colorado Roundtables, representing 15% of Colorado's population and agriculture, 85% of Colorado's total river outflows, and 100% of Colorado's vast unused legal share of the Colorado River? *Note: Colorado's currently undeveloped Colorado River entitlements could support about five million additional people, with today's declining water consumption criteria.*

Why has Colorado's recent 12 year statewide water planning process failed to consider U. S. Bureau of Reclamation's (USBR) extensive Gunnison-Arkansas Project Studies during the 1940s and 50s? *Note: USBR's Gun-Ark Studies would have efficiently exported up to 450,000 acre-feet for vital Eastern Colorado needs, without adversely impacting any senior Gunnison Basin water rights. Upper Gunnison consumptive needs for hay and cattle have declined about 35% since the 1960s.*

Why have Colorado's water planners failed to consider USBR's detailed 1987-1989 evaluations of eighteen cost-effective Upper Gunnison/Aspinall Marketable Pool Trans-mountain Alternatives?

Note: USBR's currently undeveloped Aspinall Marketable Pool Water Rights and Blue Mesa Reservoir were originally authorized by Colorado Congressman Wayne Aspinall and Congress during the late 1950s to primarily help Colorado develop and beneficially use 300,000 acre-feet of its vulnerable Colorado River Rights from Colorado's largest untapped Gunnison River Basin.

Why were Colorado Water Resources and Power Development Authority's (CWRPDA) joint Phase 2 Upper Gunnison-Uncompahgre Basin Trans-mountain Water Studies with USBR suddenly cancelled by Colorado's Department of Natural Resources during 1990, without any public explanation? Also, why were Colorado's two highest governor-appointed state water officials suddenly fired on the same day during 1990, without any public explanation?

Why are Colorado's current water planners ignoring a proposed, U. S. Patented, high altitude, multiple river basins, pumped water and energy storage solution in Gunnison National Forest, called Central Colorado Project (CCP)? *Note: CCP's April 2007 White Paper explains how it is uniquely designed to reduce western water and energy costs by multiplying the reliabilities and productivities of limited renewable water and energy resources throughout five major Southwestern river basins (Gunnison, Colorado, South Platte, Arkansas, and Rio Grande), as well as the western power grid.*

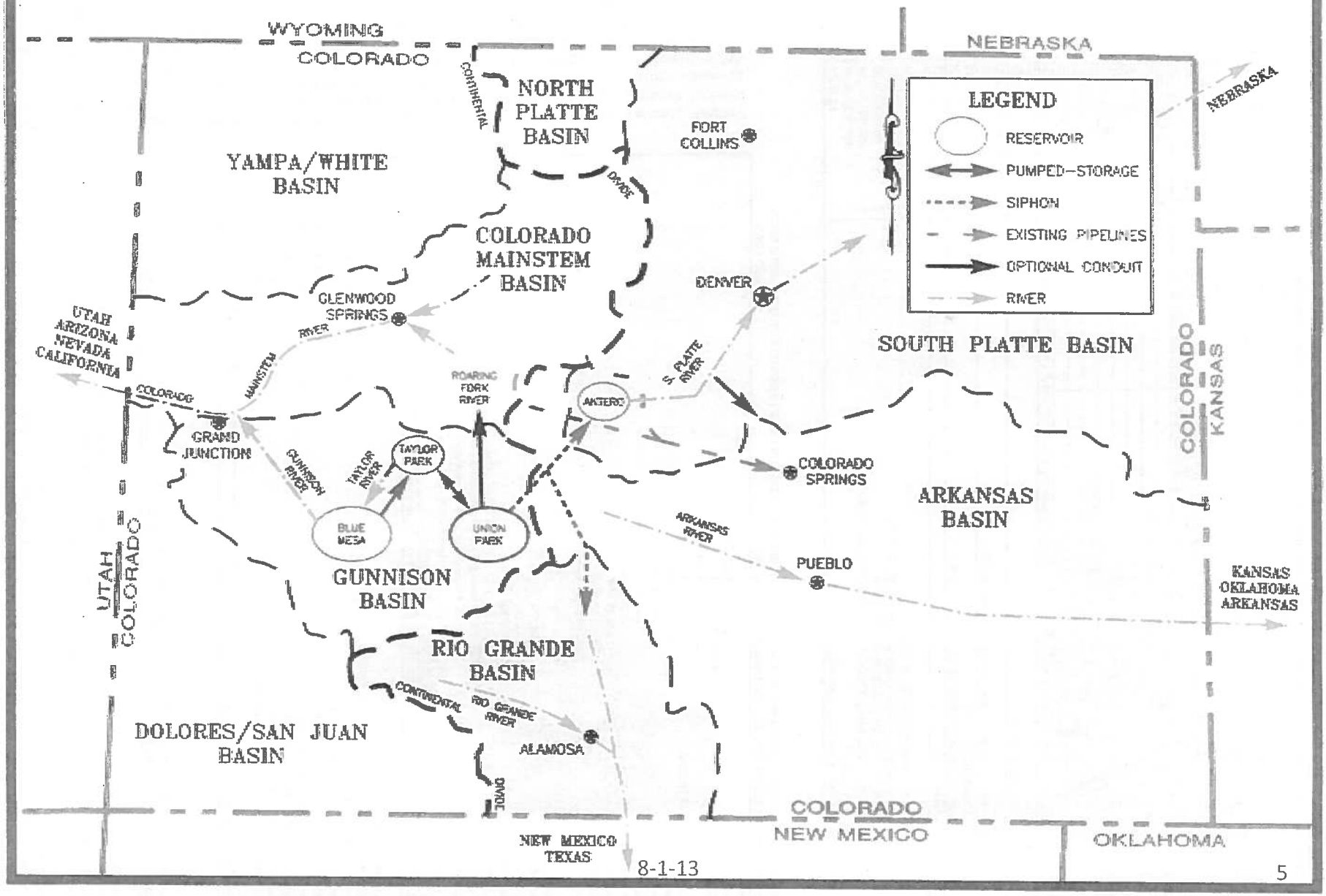
Why are Colorado's water planners ignoring CCP's unprecedented recent engineering evaluations *(summary attached)?* Annual net revenues from CCP's 3,000 megawatt Union Park-Taylor Park pumped-energy storage and peaking power operations for prevention of western blackouts will more than cover CCP's regional water solutions costs. CCP's pumped-water storage and gravity deliveries, when and where needed, will multiply productivities of existing reservoirs, delivery systems, and water rights throughout five major Southwestern river basins on both sides of the Divide. *Note: CCP's surplus revenues can also be used for local and regional forest fire and flood control needs. CCP's "oversight" may explain why Colorado's Front Range water managers are retiring early with exorbitant compensation packages.*

Conclusion: Innovative high altitude multi-basin pumped-water and energy storage projects could help Colorado and all western states reach their renewable energy goals from sporadic wind and solar operations, much sooner than projected. High altitude multiple river basin pumped-storage projects are also near and long-term solutions for highly variable western droughts, growth, recreation, environments, and climate change, throughout the 21st Century and beyond. All Colorado, western, and national leaders should immediately call for objective economic and environmental comparisons of innovative high altitude, multi-river, pumped-water and energy storage projects with traditional alternatives, as required by National Environmental Policy Act rules and good science. A State Audit of Colorado's failed water planning practices is also needed.

Allen D. (Dave) Miller, ADM B. S. Business, Univ. of Colorado, 1954; M. S. Transportation, Univ. of Tenn., 1963; Active U.S. Air Force Air Mobility Innovator 1954-1974; Retired Air Force Colonel, and active Western water and energy innovator since 1974; 719-481-2003 Fax 719-481-3452; P. O. Box 567, Palmer Lake, CO 80133
centralcoloradoproject@comcast.net www.centralcoloradoproject.us
Encls: CCP Schematic; CCP's Preliminary Regional Water & Energy Benefit-Cost Summary; U.S. Patent Abstract, dated 1-11-11.
Cc: Gov. Hickenlooper; CO Legislators; local, state, western, and national leaders.

SCHEMATIC OF CENTRAL COLORADO PROJECT (CCP)

Colorado's optimal State Water Plan



PRELIMINARY ESTIMATE OF COSTS FOR CONSTRUCTING AND OPERATING THE CENTRAL COLORADO PROJECT (CCP) MULTI-BASIN WATER SUPPLY AND STORAGE SYSTEM - ALL FEATURES INCLUDED, prepared by Horst Ueblacker, P. E., June 6, 2009

Description of Additional Multi-Basin Water Supply Features: Pump Lift from Blue Mesa Reservoir to Taylor Park Reservoir for up to 300,000 acre-feet annually, with gravity delivery conduits from Union Park Reservoir (1.2 million acre-feet) for selective diversons to South Platte, Arkansas, Rio Grande, and Gunnison River Basins, when and where needed for growth, droughts, climate change, recreation and environments. (Note: Regional modeling will determine expected values and revenues from CCP's integrated multi-basin water supply augmentation capabilities.)

Power and Energy Requirements Pump Lift Operation Blue Mesa - Taylor Park Reservoir: 126.0 MW (Power); 919,800 MWh (Energy)

Item	Features/Capacity/Size		Jan 09 Costs
1	*Blue Mesa Pumping Plant Intake Structure: Q=500cfs*		$ 7,382,250.00
2	*Blue Mesa Pumping Plants: 3 EA. @ Q=500 cfs*		$ 195,034,625.50
3	*Blue Mesa Pipeline: Q=500 cfs, L=187,000', d=9'*		$ 426,990,900.00
4	*Enlargement of Taylor Park Reservoir: 167,500 acre-feet (HWL El. 9,360 feet)*		$ 36,462,592.00
5	*Union Park Dam, Reservoir, Waterways, and Access Roads: (see 3,000 MW Union Park PHES Operation)*		$ -
6	*Union Park Tunnel: Q=500 cfs, d=11', L=75,400'*		$ 434,275,200.00
7	*South Cottonwood Creek Pipeline: Q=500 cfs, d=9', L=15,500'*		$ 18,669,750.00
8	*Arkansas Valley Siphon: Q=500 cfs, d=9', L=64,300'*		$ 496,470,280.00
9	*Sevenmile Creek Pipeline: Q=500 cfs, d=9', L=4,300'*		$ 4,708,500.00
10	*Trout Creek Pass Tunnel: Q=500 cfs, d=11', L=29,900'*		$ 135,463,760.00
11	*Salt Creek Drop Structure/Creek Stabilization: Q=500 cfs, L=23,000'*		$ 7,617,600.00
12	*Transmission Line: 69KV (900 Amps), L=150,000'*		$ 10,113,636.36
13	*Rio Grande Basin Conduit: Q=200 cfs, d=6.5', L=184,694'*		$ 222,095,016.00
14	*Roaring Fork Valley Conduit: Q=200 cfs', d=6.5', L=85,061' (Pipeline); Q=400 cfs, d=10', L= 47,045' (Tunnel)*		$ 277,282,268.00
	Subtotal		$ 2,276,576,377.86
	Unlisted Items (20%)		$ 455,115,275.57
	Subtotal		$ 2,730,691,653.43
	Engineering, Administrative and Legal Services (25%)		$ 682,672,913.36
	Total Construction Cost		$ 3,413,364,566.79
	Interest During Construction @ 4.196%, n = 5 years		$ 776,886,552.32
	Total Investment		$ 4,192,251,119.11
	Annual Cost		
	Amortized Investment 50 yrs. @ 5%		$ 229,637,830.64
	OM (Excluding power and energy costs/revenues) @ 4.98%		$ 11,435,963.97
	Replacement Storage @ Blue Mesa ($50/acre-ft.)		$ 15,000,000.00
	Annual Power and Energy Costs: $1,686,750.09/MW; $45.77/MWh		$ 254,629,757.34
	Total Annual Cost		$ 510,703,551.95
	Annual Cost per acre-ft ($/acre-ft.)		$ 1,702.36

PRELIMINARY ESTIMATE OF PROBABLE REVENUES AND CONSTRUCTION COSTS FOR UNION PARK/TAYLOR PARK PUMPED HYDRO ENERGY STORAGE OPERATION, Horst Ueblacker, P. E., June 3, 2009 PAGE 1 OF 2

Power and Capacity			
Head	240.58	Meters	
Limiting Forebay Volume	41,939,000.00	M^3	
	40,000.00	acre feet	
Res.Surface Area @ El.10,120 ft.	10,040.00	Acres	
Flow Rate Min	1,164.97	M^3/S	
Flow Rate Max	1,456.22	M^3/S	
Storage Time Min	8.00	hours	
Storage Time Max	10.00	hours	
Power Min	2,474.48	MW	
Power Max	3,093.11	MW	
Energy	24,744.85	MWh/day	** Assumes 15% of forebay volume is unused
Revenue			
Cycle Value	$1,104,130		
Annual Revenue	$401,903,194		
Avoided NG Cost	$253,325,388		
Avoided CO_2 Emissions	9,713,020.54	tons[metric] of CO2 avoided/year	
CO_2 value	$48,565,102.72	value per annual CO2 reduction	
Avoided SO_2 Emissions	2,165.35	tons[metric] of SO2 avoided/year	
SO_2 value	$1,299,209.44	Annual Traded Value	
Total	$705,092,894.68	Total Annual Value	
Total	$450,468,296.92	Counted Annual Revenue	

Cost Breakdown by %	%	
Environmental Impact Statements and Federal Permits	2%	$82,398,318
Power Station Structures and Improvements	9%	$351,058,033
Reservoirs, Dams, Waterways, and Access Roads	22%	$890,519,820
Reversible Pump Turbines and Valve Governors	9%	$370,792,430
Generator Motors and Static Starting Equipment	6%	$257,494,743
Accessory Electrical Power and Plant Substation Equipment	10%	$408,970,317
Engineering, Administrative, and Legal Services	14%	$569,399,842
Subsurface Exploration, Design, and Construction	27%	$1,090,404,406
OTHER:		$0
Cost Estimate Based on Needed Facilities and other Costs	TOTAL	$4,021,037,909

PRELIMINARY ESTIMATE OF PROBABLE REVENUES AND CONSTRUCTION COSTS FOR UNION PARK/ TAYLOR PARK PUMPED HYDRO ENERGY STORAGE OPERATION, Horst Ueblacker, P. E., June 3, 2009 cont'd. PAGE 2 OF 2

Payback Period and Life Cycle				
overnight cost	$4,021,037,910	Cost based on Max Cost of shortest storage duration & itemized cost entries.		
Does CO2 Have Market Value?	yes	yes or no	CO2 valued at $48,565,102.72	at $5/ton
Annual Rev	$655,228,583	Revenue based on Min storage time and buying vs.selling data		
Payback Time	13 years			
Life Time Net Present Value	$93,102,943,163	100 year plant lifetime		
Interest Rate	6.50%			
O & M	$20,105,190	per year		
Construction Time	5 years			
Annual % Increase in Cost	1.00%			

Added Note by A. D. Miller, July 2014: These Preliminary Engineering Evaluations of Central Colorado Project's unprecedented high altitude pumped-water and energy storage capabilities, dated June 2009, were prepared by Horst Ueblacker PE (5-19-39 to 3-3-11) of UEBLACKER ASSOCIATES, Consulting Engineers, Geologists, Constructors, Lakewood, Colorado. Horst was one of the world's most respected geo-technical engineers, and water, energy, and dam experts, before his untimely heart failure and death. In addition to these highly professional benefit-cost evaluations of CCP, Mr. Ueblacker and his internatinal team of experts completed a 125 page Phase 1 Feasibility Level Geological and Geotechnical Investigation for Union Park Dam, dated February 2004. This detailed report concluded: *"Geological conditions are favorable for construction of a large roller-compacted concrete (RCC) Dam in Union Canyon. This modern, strategically located dam and reservoir can safely store 1,200,000 acre-feet of high quality multi-year drought protection for Colorado's five major river basins. The dam's total estimated construction cost is $394,563,000. With its off-setting peaking power revenues, and dam costs of only $329 per acre-foot, Union Park Dam may become the world's most cost-effective water storage facility."* UEBLACKER ASSOCIATES also completed an 83 page Phase 2 Stability Evaluation Report of Union Park Dam under Hydrologic Loading, dated July 2004. This report included a 40 page Hydrologic Evaluation for Union Park Reservoir by Alan J. Leak, WRC Engineering, Denver, Colorado, dated July 14, 2004. The results indicated *"the inflow design flood can be safely retained by the proposed 575 ft. high and 2,050 ft. wide roller compacted concrete gravity dam, requiring no emergency spillway".*

US007866919B2

(12) **United States Patent**
Miller

(10) **Patent No.: US 7,866,919 B2**
(45) **Date of Patent: Jan. 11, 2011**

(54) **SYSTEM AND METHOD FOR CONTROLLING WATER FLOW BETWEEN MULTIPLE RESERVOIRS OF A RENEWABLE WATER AND ENERGY SYSTEM**

(75) Inventor: **Allen David Miller**, Palmer Lake, CO (US)

(73) Assignee: **Natural Energy Resources Company**, Palmer Lake, CO (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 295 days.

(21) Appl. No.: **12/102,651**

(22) Filed: **Apr. 14, 2008**

(65) **Prior Publication Data**

US 2008/0253837 A1 Oct. 16, 2008

Related U.S. Application Data

(60) Provisional application No. 60/911,451, filed on Apr. 12, 2007.

(51) **Int. Cl.**
E02B 9/02 (2006.01)
E02B 13/00 (2006.01)

(52) **U.S. Cl.** **405/80**; 405/51; 405/53; 405/75

(58) **Field of Classification Search** 405/36, 405/51-53, 55, 75, 80; 210/747, 170.01
See application file for complete search history.

(56) **References Cited**

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4,192,627	A	3/1980	Casebow	

(Continued)

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(Continued)

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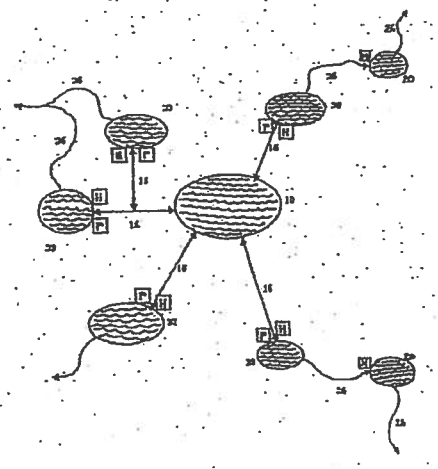
"Blenheim-Gilboa Pumped Storage Power Project," available at http://www.nypa.gov/facilities/blengil.htm, printed Jul. 13, 2010, copyright 1996-2010, 2 pages.

Primary Examiner—Tara Mayo-Pinnock
(74) *Attorney, Agent, or Firm*—Sheridan Ross P.C.

(57) **ABSTRACT**

A high altitude pumped-storage system for selectively integrating, storing, and distributing water and energy to increase the regional productivity of existing and future water and energy resources throughout multiple river basins is disclosed. This system addresses in part the increased requirement of supplying energy demands from a renewable energy source, such as wind, solar, or water generated power. The system includes at least one primary reservoir connected to multiple secondary reservoirs by conduits. The system allows for selectively distributing water and energy between secondary reservoirs and at least one primary reservoir. The system may comprise one or more hydroelectric power generation facilities. A method for increasing the regional efficiency of existing and future systems for producing, storing, and delivering energy from sources such as hydroelectric, wind and solar power from the water collected by the system described herein is also disclosed.

16 Claims, 4 Drawing Sheets



September 8, 2015

Urgent Message For: Colorado Springs Mayor John Suthers; City Council Members; El Paso County Commissioners; Pikes Peak Regional Water Authority, & Southeastern Colorado leaders

Subject: Southeastern Colorado's unanswered water planning questions

The attached **Colorado's unanswered water planning questions**, dated August 27, 2015, briefly explains how a proposed high altitude pumped-water and energy storage project in Gunnison National Forest, called **Central Colorado Project (CCP)**, could soon reduce escalating renewable water and energy shortages and costs, throughout our nation's arid Southwest Region – including Colorado Springs, El Paso County, and Southeastern Colorado.

Unfortunately, Colorado Springs Utilities (CSU) has seriously violated National Environmental Policy Act (NEPA) rules and good science by failing to consider CCP's breakthrough, U. S. Patented concept, and lower-cost solutions for unpredictable western droughts, growth, and climate change, during Southern Delivery System's (SDS) EIS Evaluations.

In addition to CCP's major overlooked benefits, CSU officials have failed to consider several superior Gunnison/Aspinall Marketable Pool Trans-mountain Alternatives from Colorado's largest Blue Mesa Reservoir and untapped Gunnison River Basin. These detailed U.S. Bureau of Reclamation Gunnison Trans-mountain Studies for Front Range needs were completed during the late 1980s, as part of Colorado Water Resources and Power Development Authority's (CWRPDA) Phase 1 and 2 Upper Gunnison-Uncompahgre Basin Water Studies.

Central Colorado Project is substantially superior to SDS and all of USBR's conventional Gunnison Trans-mountain Alternatives. CCP's massive high altitude pumped-storage and low cost gravity deliveries can immediately augment Eastern Colorado rivers and existing Front Range pipelines, reservoirs, and delivery systems during extreme droughts, growth, and climate change conditions. In addition, CCP's major net cash flows from its high altitude, high value, peaking power operations for prevention of western blackouts, can be used to lower water and energy costs throughout Colorado, and its downriver states on both sides of the Divide.

If Colorado Springs Utilities were a cooperative owner/developer of CCP, its surplus water, energy, and cash flows could lower renewable water and energy rates for Colorado Springs, El Paso County, and Southeastern Colorado, as well as provide funds for urgent local and regional flood and forest fire control needs.

Why are Colorado Springs water officials expediting construction of SDS's costly, coal fired, pipeline pumping operation from Pueblo Reservoir during an obvious long period of slow growth, while deferring construction of terminal reservoirs east of Colorado Springs that would be needed as buffers during highly variable periods of peak and low water demands?

Also, why have SDS permitting officials ignored several U. S. Bureau of Reclamation Dam Safety Studies, which indicate Pueblo Reservoir could suddenly fail catastrophically, with only 55% of today's Probable Maximum Flood (PMF) criteria. In addition, Pueblo Reservoir has never been filled to its designed spillway capacity, because of stability concerns involving the dam's concrete spillway on a weak sandstone and shale foundation. This means thousands of Arkansas Valley lives are potentially at risk. Why were all of these dam safety facts ignored during CSU's fatally flawed EIS permitting process for Southern Delivery System?

With regard to Colorado Springs' Utilities sunk costs in SDS's constant-flow pipeline pumping operations from Pueblo Reservoir, it may be technically and economically feasible to convert this obsolete facility into a needed local and regional storm water collection and storage system for El Paso and Pueblo Counties, as well as Colorado's Lower Arkansas River Basin.

All Southeastern Colorado stakeholders should ask why local, state, and federal water leaders have improperly ignored Colorado's superior Gunnison Trans-mountain water supply alternatives, *including Central Colorado Project,* during Southern Delivery System's formal EIS evaluations of *all reasonable alternatives*. Also, why have key leaders responsible for Southern Delivery System's seriously flawed evaluations quietly retired early for unexplained reasons?

Allen D. (Dave) Miller, ADM B. S. Business, Univ. of Colorado, 1954; M. S. Transportation, Univ. of Tenn., 1963; Active U.S. Air Force Air Mobility Innovator 1954-1974; Retired Air Force Colonel, and active Western water and energy innovator since 1974; 719-481-2003 Fax 719-481-3452; P. O. Box 567, Palmer Lake, CO 80133
centralcoloradoproject@comcast.net www.centralcoloradoproject.us
Enclosures: Colorado's unanswered water planning questions, dated August 27, 2015, with enclosures.
Cc: Gov. Hickenlooper; CO legislators; local, state, western, and national leaders.

PUBLIC INPUT ITEM 102

Upper Gunnison River Water Conservancy District

210 West Spencer Avenue, Suite B • Gunnison, Colorado 81230
Telephone (970) 641-6065 • Facsimile (970) 641-1162 • www.ugrwcd.org

September 16, 2015

Colorado Water Conservation Board
1313 Sherman St., Suite 721
Denver, CO 80203

RE: Comments on Colorado Water Plan

Dear Board and Staff:

The Upper Gunnison River Water Conservancy District (UGRWCD) represents all of the headwaters of the Gunnison River above Blue Mesa Dam, including parts of Gunnison, Hinsdale and Saguache Counties. Our mission is to be an active leader in all issues affecting the water resources of the Upper Gunnison River Basin. The UGRWCD has had several of its board members and staff involved in the Gunnison Basin Roundtable since its inception and has staff who have been very active with the Interbasin Compact Committee.

Our District commends the CWCB board and staff for their efforts in developing a comprehensive Colorado Water Plan. We appreciate the efforts in seeking a 'bottom-up' approach for solving our state's future water needs. Through your efforts, water leaders and citizens both have gained a tremendous amount of understanding of the future water challenges facing each of the eight diverse river basins in our state.

The following comments address concerns we have with the proposed Plan. These concerns are listed by their particular chapter in the CWP:

Chapter 5:

- The comment on page 80 describing Colorado's growth as 'inevitable' is troubling. Growth in Colorado needs to be sustainable - we do not support unfettered, uncontrolled growth as 'inevitable'.

Chapter 6:

- The State should identify obstacles to sustained future agricultural production and develop strategies for overcoming them, including providing assistance in developing crop and production diversification and the infrastructure to support it, and getting new young farmers on good agricultural land under reduced irrigation conditions, land that might otherwise be completely dewatered and returned to native prairie.
- A system is needed for returning dried-up agricultural lands to their pre-irrigation conditions or to a condition that does not negatively impact adjacent landowners. The state must also address the difficult task of mitigating negative impacts of agricultural dry-up on the entire community surrounding formerly irrigated lands.
- Stream management plans provide a vital framework for decision-making and project implementation. These plans are critical in meeting Colorado's recreational and environmental needs. A process must be developed to implement these stream management plans comprehensively throughout the state that incorporate a strategy of sustainable properly functioning habitat, acknowledging that requirements of current water law and administration may limit the scope of the strategies. Statutory and/or administrative alternatives should be explored. Where there is not a local stakeholder that can take the lead on development of a stream management plan, the CWCB should hire consultants or utilize its own staff to develop plans for all stream segments within the state.
- Alternative Transfer Methods (ATMs): The state should identify obstacles to ATMs and seek creative approaches to overcome these obstacles.

Chapter 7:

- It is the intent to integrate water quality protection with water resource management. Therefore, we support the Governor's Executive order creating an ad-hoc panel consisting of an all-inclusive group of stakeholders to resolve water quality/quantity issues. The institutional barriers to integration are listed on page 297.

Chapter 8:

- The Conceptual Framework adequately addresses the risk of future depletions to the Colorado River System; however, a statement should be added that the power of eminent domain must not be employed to condemn West Slope water rights to support the yield or reduce the hydrologic risk of a new transmountain diversion project.
- The Contingency Plan should be more prominent in Colorado's planning efforts.
- The disparity in conservation goals among the Roundtables requires a mechanism to resolve these inconsistencies, including an ad hoc committee, to reach consensus.

Chapter 9:

- A joint review process involving all permitting agencies (local, state and federal), with input from interested stakeholders, will improve the permitting process for water projects.
- The proposal for the State to sponsor water projects is a major new policy that should not be included in this plan. A similar concept, the ill-fated Colorado Water Projects Bond Referendum, also known as Referendum A, was soundly defeated in 2003 by Colorado voters. New major infrastructure investments ($20 billion, as stated on page 332) with state obligations need to be referred back to the voters.
- The concept of a contingent 401 certification undermines transparency and stakeholder involvement and should be deleted.

Chapter 10:

- The timeframes of a three-year 'near-term' and a six-year 'mid-term' for initiating the Plan are unrealistically optimistic.
- Many components of Chapter 10 are recently developed and have not been sufficiently reviewed and discussed at the BRT level.
- Roundtables should be specifically identified as parties to be consulted on any legislative proposal (Section 10.3, bullet one, page 393).
- Provide "adequate annual support" for stream management and watershed plans, rather than a fixed amount of $1 million as stated on page 394.
- Adequate staff and financial resources for management, review, and programmatic oversight of proposed water projects are not addressed in the Plan.

Thank you for the opportunity to comment on the second draft of the Colorado Water Plan. We hope that you carefully consider our input when finalizing this document that addresses the future of water in Colorado.

Sincerely,

Brett Redden, President
Upper Gunnison River Water Conservancy District

PUBLIC INPUT ITEM 103

Dear Colorado Water Planners,

Thank you for this opportunity to comment on our 2nd draft of the Colorado Water Plan.

I am encouraged that the Plan recognizes many of the values that I hope we preserve for all Coloradans:
- A productive economy that supports vibrant and sustainable cities, viable and productive agriculture, and a robust skiing, recreation, and tourism industry;
- Efficient and effective water infrastructure; and
- A healthy environment that includes healthy watershed, river, streams, and wildlife.

I have had the privilege of involvement in the river community of Colorado since 1990. I have come to appreciate, if not always understand the outright and subtle aspects of our rivers as community builders both adjacent to and remote from the actual rivers. Our rivers are the hallmark of our state and should be treated as such.

As Colorado grows, the sole aspect of providing storage and transport of our water resources should be examined with a broader agenda. The economic, environmental, community and recreational benefits of our rivers has not been given adequate weight in the decision making process. While the rights to the water flowing in our rivers might be remote, the consideration of benefits of flowing rivers within our state need not be ignored.

Specifically, creating legal provisions that guarantee river recreational flows for public enjoyment, economic benefit, and river corridor health would create a much broader benefit for the State. Also state law needs to be revised to allow public access to all Colorado rivers and streams. The removal of physical barriers need to be removed so that Coloradans may enjoy our communities' assets. Finally, please increase efforts to educate our citizens regarding the importance of water and the inter-relationship of rivers to the creation of and the sustainability of our state as a healthy and dynamic place to live. Isn't there a great river named after our great state?

Thank you for your efforts in creating our Colorado Water Plan and for the opportunity to comment in this collaborative process.

Sarah Dentoni
Fort Collins, CO

PUBLIC INPUT ITEM 104

ROARING FORK
CONSERVANCY
Bringing People Together to Protect Our Rivers

September 17, 2015

Colorado Water Conservation Board
1313 Sherman Street
Denver, CO 80203
via email: cowaterplan@state.co.us

Re: Comments on the Second Draft of Colorado's Water Plan

Madam Chair and Members of the Board,

Thank you for the ongoing opportunity to comment on the creation of Colorado's Water Plan (CWP). Roaring Fork Conservancy (RFC) has commented at every available juncture in the development of the CWP, from the creation of the Colorado Basin Implementation Plan (BIP) to this Final Draft of the CWP. Please consider those previous comments restated and incorporated herein, and kindly include the comments set forth below in the record.

1. Economic Importance of Flows Sufficient to Support Recreational Uses and River Health

As indicted in our pervious letter, RFC has updated The 2002 Fryingpan Valley Economic Study, which estimated a $1.8 million annual contribution to the local economy. RFC partnered with Colorado State University to analyze the direct and spin-off economic activity created from recreational fishing on the Lower Fryingpan River and Ruedi Reservoir. The 2015 Study underscored the vital economic importance of keeping enough water in the river, finding the economic impact of recreational fishing increased to nearly $4 million dollars. The 2015 Study also found that total annual angling expenditures on the Lower Fryingpan River were $3.3 million, with almost half of the expenditures coming in June, July, and August. Moreover, the 2015 Study found that recreational fishing on the Lower Fryingpan River contributes 38.3 jobs to the region.[1] It's notable the 2015 study doesn't reflect impact of non-angling activities, and that it reflects tourist revenue only and doesn't account for revenue generated by locals.

[1] Martin Shields et al. 2015. *Lower Fryingpan River and Ruedi Reservoir Economic Impact Study*. Available at: http://www.roaringfork.org/news/fryingpan-economic-study/.

As such, the $4 million dollar figure should be taken as an extremely conservative figure, not reflecting the total economic impact of a healthy river system from activities outside the scope of the study such as hiking, kayaking, rafting, standup paddle boarding, etc, or the impacts generated by a second homeowner who decides to invest in a multimillion dollar riparian property because of the great fishing and ancillary recreational opportunities provided by healthy rivers and streams.

Keeping sufficient water in the streams for recreation and tourism is integral to the economic vitality of the town of Basalt and the entire Roaring Fork Valley. Indeed, the 2015 Study revealed the powerful economic impacts of governmental policies to manage stream flows. Management practices to achieve stream flows more suited to healthy aquatic life in the winter and wadeability in the summer resulted in a stated increase in the number of trips taken by respondents. In the case of winter flows, this translated to a potential increase in economic activity in the region of $1.5 million in output, 15 jobs and $944,401 in value added.[2] In the case of summer flows, the economic impact was estimated at $1.1 million in output, 11 jobs and $706,300 in value added. The added economic output from increased trips due to increased winter river flow management translated to a 40% increase in the regional economic impacts from angler recreation on the Lower Fryingpan River, while the added output from increased trips due to wadeable summer flows management translated to a 30% increase.[3]

2. RFC Strongly Opposes any new TMDs

RFC remains opposed to any new TMDs originating from the Colorado Basin or other areas of the western slope, and continues to harbor concerns about the inclusion of the Draft Conceptual Framework (CF) in the CWP.[4] Our previous comment letter set forth the case against new TMDs in detail, including the economic, agricultural, ecological and legal hazards such a project would pose. Despite RFC's ongoing concern to this inclusion, the CF has the potential to play a productive role by giving the Western Slope a meaningful seat at the table. However, the CF must continue to evolve to address some current shortcomings. For instance, the CF leaves key terms undefined, offers only vague assurances, and its protections are nonbinding.

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[2] Supra note 1 at page 2.

[3] *Id.*

[4] Regarding the latter point, RFC continues to concur with the Colorado Basin Roundtable.

However, the CF could be useful as part of the perfection process for any conditional TMD water right. So, if there is a water right on the books that is not being diverted yet, it would be useful if the diverter would have to satisfy the letter and spirit of CF before taking more water to the Front Range. Initially this could be in the nature of a "handshake" arrangement, through legislation would undoubtedly be necessary to effectuate such a scheme.

RFC seeks ironclad assurances any water transferred to the Front Range in the name of "saving ag" is actually used to that end in perpetuity. On the flipside of the same coin, RFC insists measures ought to be taken to prevent the purchase of West Slope agricultural water rights to fulfill any new TMD. The CF is silent on this point and RFC believes that a balanced approach should be taken, not favoring either slope over the other, in preserving Colorado's agricultural heritage. Indeed, such concerns are dramatically demonstrated in ongoing litigation regarding the City of Aurora's 22 years of municipal use of TMD water despite the fact the decree "plainly says irrigation,"[5] as the Justice Gregory Hobbs underscored in oral argument. Lastly, the CWP - even if approved by the General Assembly - will be only policy and will not have the force of law.[6] Therefore, the CF should not be viewed as a guaranteed roadmap to a new TMD.

3. Governance of Existing TMDs

A glaring lack of communication and coordination regarding the management of existing TMDs present safety and economic hazards that must be addressed. This June, diversions via the Twin Lakes Tunnel were reduced to only 3 to 4 cfs to mitigate flood risk in the Arkansas River Basin, causing the highest flows experienced on the Roaring Fork River in twenty years without notice.[7] This August, Grizzly Reservoir was completely drained,[8] without notice, sending significant amounts of sediment down the Roaring

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[5] Brent Gardner-Smith, Aspen Journalism, June 10, 2015, *Justice scolds Aurora over diverted Fryingpan River water use*. Available at: http://aspenjournalism.org/2015/06/10/justice-scolds-aurora-over-diverted-fryingpan-river-water-use/

[6] See C.R.S. Section 37-60-106(V).

[7] Brent Gardner-Smith, The Aspen Times, June 12, 2015, *Roaring Fork River threatens to flood.* Available at: http://www.aspentimes.com/news/16775907-113/roaring-fork-river-threatens-to-flood

[8] Staff Report, The Aspen Times, August 11, 2015, *Grizzly Reservoir drains, causing muddy waters in the Roaring Fork*. Available at: http://www.aspentimes.com/news/17674452-113/grizzly-reservoir-drains-causing-muddy-waters-in-the

Fork, hindering peak tourist season fishing and adding elevated levels of metals to the system[9]. Such events must be communicated ahead of time for the safety and well being of the people on the Roaring Fork side. Moreover, as the latter incident demonstrates, many reservoirs are aging. There should be a plan in place for maintenance to ensure safety and mitigate impacts to the environment and the recreational economy. RFC can help coordinate and communicate, if East Slope entities and the Bureau of Reclamation are willing to leverage our ability to engage the community, contribute to sound decision making, and disseminate information.

4. Regulatory Scheme to Protect Aquatic Life and Funding Non-Consumptive Needs

RFC supports developing a regulatory scheme, based on aquatic life, to foster accountability for potential impacts of dewatering, pollution, etc., on aquatic life. Impairments to the macroinvertebrate populations through the Roaring Fork in Aspen can be indicative of impairments to the river resource and the quality of the fishery. These types of species can serve as a "canary in the coal mine" and, are included as provisional metrics in Colorado as part of Section 303(d) of the Federal Clean Water Act. A regulatory scheme similar TMDL management ought to be established in acknowledgment of this fact. In essence, instead of a pollutant exceeding a certain level prompting the establishment of a TMDL; decreases in critical species would trigger protective measures such as a universal obligation on those impacting the waterway to maintain parameters that protect the quality of aquatic life. For example, if decreased flows are deemed a cause for adverse conditions for aquatic life, those responsible for the decreased flows should play a role in remediation. Other examples may include impacted riparian areas or low-level pollutants. Increased state funding mechanisms for non-consumptive needs should be developed and applied to future water projects that implement consumptive and non-consumptive strategies consistent with the CWP, and funding projects resulting in a public benefit should be emphasized.[10] Moreover, a non-consumptive division should be added to the Colorado River District to

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[9] Jason Auslander, The Aspen Times, September 9, 2015, *Reservoir discharge exceeded state limits*. Available at: http://www.aspentimes.com/news/18098450-113/reservoir-discharge-exceeded-state-limits.

[10] See CWP Second Draft at Chapter 7 p. 308.

better manage the plethora of environmental and recreational projects in the Colorado Basin.

5. RFC Supports Wild & Scenic Designation for the Crystal River

As home to the Crystal Mill, one for the most iconic and frequently photographed locations in the state, the Crystal River is the perfect candidate to be Colorado's second Wild & Scenic River. RFC and other local, state, and nationwide entities demonstrate the necessary commitment to protect the river by non-federal entities exists to implement protective management plans. Moreover, designation will in fact protect the Crystal's free flowing character and the utterly unique outstandingly remarkable values (ORVs) the Crystal has in spades. This river system is home to cutthroat trout, Bald Eagles, Lewis Woodpeckers and rare plant species, and draws anglers, kayakers and sightseers from around the world. Therefore, the CWP ought support the movement calling for Congress to act to protect the Crystal River.

A useful lesson learned from the Crystal River experience is the productive role of Stream Management Planning to create accountability for non-consumptive uses. Leveraging a stakeholder-driven process, RFC partnered with Public Counsel of the Rockies and Lotic Hydrological, LLC, to meet with local water users and water rights holders throughout the watershed to respond to the Crystal's inclusion on America's 'Most Endangered Rivers' list by American Rivers in 2012. Throughout 2013, RFC and these stakeholders exchanged ideas on ways to enhance riparian and instream conditions in and along the Crystal River. This process will yeild a proposed Crystal River Stream Management Plan (CRSMP). The CRSMP responds to specific needs articulated by stakeholders in the watershed and was premised upon all stakeholders playing an active role in the future. This approach, a stakeholder-driven cooperative effort, has proven to be a success story in RFC's mission to bring people together to protect our rivers, and the CWP should facilitate and fund the adoption of similar strategies and Stream Management Planning across Colorado.

6. Importance of the Critical Action Plan

RFC endorses the Critical Action Plan and suggests that the Colorado Water Conservation Board take ownership of the plan and facilitate completion of the enumerated action items, with the caveat that implementation, particularly of Section II, does not come at the cost of environmental protections.

7. RFC Continues to Encourage the Adoption and Promotion of Conservation Policies

Water and land use planning on both the east and west slope needs to consider the vital connection between these two fields. RFC continues to support and endorse the Northwest Colorado Council of Government's position outlined in the Consensus Statement that the Land Use subsection of the CWP (Ch. 6.3.3) should be elevated in importance and expanded, with additional language underscoring the importance of local land use policies reflecting the link between water quality and land use.[11] Outdoor water use is an area ripe for major conservation gains. While RFC doesn't insist lawns are a thing of the past, local land use codes ought to mandate green infrastructure and water-efficient native landscaping in new development, and incentivize conversion for existing development. Adopting make-sense policies regarding the timing and amount of watering, along with when not to water (i.e. drought/shortage) on the East and West slopes is needed to secure our water future. Also, water providers should be formally connected to land use planning, and have more of a defined and binding role in the process in order to facilitate the intelligent water planning needed to cope with scarcity. It is our hope implementation of Section III.C. of the Critical Action Plan will address these needs.

As one of the oldest, and well-respected watershed conservancy organizations in Colorado, RFC is uniquely well positioned to lead education and outreach efforts to promote conservation statewide. The capital campaign for our River Center is nearing completion and the facility will anchor the revitalization of downtown Basalt's riverfront. This 4,000 plus square foot facility will serve as a regional hub for watershed related education, research and policy development. The River Center will be open to the public, providing innovative, interactive and layered learning experiences for a diverse audience through programming, along with indoor and outdoor exhibits. It will provide opportunities for action while causing people to re-think their relationship to water. Given that 80% of respondents from the 2015 Study fishing the Fryingpan are either in-state or out of state non-

[11] This was added as an addendum to our previous letter.

locals,[12] the River Center will reach an audience well beyond the Roaring Fork Valley. Therefore, the River Center will be key to meeting Critical Action Plan item Number 7[13] to inform and engage Coloradans with their water future.

We respectfully request the comments above be considered and incorporated into the development of the CWP. Thank you for your ongoing efforts and consideration.

Sincerely,

Richard J. Lofaro Jr.
Executive Director

[12] Shields et al. 2015. *Lower Fryingpan River and Ruedi Reservoir Economic Impact Study*, at page 12.
[13] See CWP Second Draft at Chapter 10 p. 415.

PUBLIC INPUT ITEM 106

September 17, 2015

James Eklund
Director, CWCB
1313 Sherman Street, Room 721
Denver Colorado 80203
cowaterplan@state.co.us

Dear Mr. Eklund:

The South Platte Basin Roundtable and Metro Roundtable (BRTs) would like to thank you, your staff, and the CWCB Board Members for your collective hard work and dedication in producing the Second Draft of Colorado's Water Plan (CWP). A special thanks to Jacob Bornstein, Brent Newman and Kevin Reidy for providing thorough presentations regarding the content of the 2nd Draft CWP at recent BRT meetings.

The BRTs comments on the 2nd Draft CWP summarized below address both consumptive and nonconsumptive (environmental and recreational) concerns and are intended to help shape the Final 2015 CWP to be submitted to the Governor on December 10, 2015. The comments are organized by chapter and concept/issue and include a reference to the location in the CWP where appropriate. The issues of key importance to the BRTs include development of additional storage, preservation of the Colorado Doctrine, and the methodology associated with M&I conservation and the stretch goal. It is our understanding that many BRT members will be providing more detailed comments independently on behalf of the entities that they represent.

Chapter 1 - Introduction

The statements in the introduction set the tone for those reading the CWP. We believe that several of these statements currently set the wrong tone for ongoing collaboration and discussion. These statements should be given careful consideration and should instead focus on framing the path forward on solving the issues and overcoming Colorado's water supply challenges and needs. Specifically, those statements of concern are:

- "If we're smart and strategic, (and we are), Colorado has enough water to meet our needs well into the future. The next sentence contradicts the previous sentence by stating " ... we do not have enough water for all our needs all of the time."
    - *Suggested modification: As is the case with other Western States, we do not have enough water for all our needs all of the time. Our principle challenge lies in managing the water we have available under Colorado Water Law to best meet the needs and values of Colorado citizens.*
- "A blind hope that basin economies, watersheds, and ecosystems can withstand more water diversions" (page 1, second bullet).
    - *This statement implies that the good planning that cities and water suppliers have used to plan for water supply projects is based on "blind hope" instead of careful analysis. It also implies that there shouldn't be any more water diversions, because economies, watersheds and ecosystems can't withstand such diversions.* ***This bullet should be eliminated****.*

- "Populations striving to recreate the water-intensive landscapes of the Eastern U.S. instead of adopting a Western water ethic" (page 1, fourth bullet)

    - *This statement implies that it is wrong or "unacceptable" for the residents of the urban areas to value the area's environment. The Plan itself recognizes "the vital importance of urban landscape and its benefits, including improved air quality, surface water quality and groundwater quality, increased property values, aesthetics, and general quality of life" (page 82), and that "healthy urban landscapes enhance the livability of a city or town and are a crucial asset for urban populations" (page 86), but doesn't reconcile that information with the introductory statement that this urban landscape is "unacceptable to most of us". **This bullet should be modified**.*

- Water laws and administration are referred to as "out of touch with our changing needs" (page 2, second bullet).

    - *We do not agree with this statement and believe it is not consistent with the Governor's executive order. Suggested modification: "the Colorado Doctrine has worked well for 150 years to protect the property rights of water rights owners. Incremental adjustments have worked well to accommodate changing needs. With minor changes of specific statutes to meet new challenges, we are confident the Colorado Doctrine will continue to be effective in meeting our citizen's needs in the future."*

- "Dogmatic views of water law that position the State of Colorado as the sole obstacle to changes in water use" (page 2, third bullet)

    - *We are not sure what is meant by this statement. We are suspicious of any changes in water law that diminishes the potential protection of water right holders. **This bullet should either be modified or eliminated**.*

Chapter 3 – Overview of Each Basin

Under the South Platte Basin Challenges, the last bullet (p. 45) should be separated into two, with the last sentence being its own bullet. In the description of the BIP themes, the discussion of the four legs of the stool (p. 54) should include the discussion within the SP-BIP related to storage along with environmental and recreational needs being integral to the four legs of the stool.

Chapter 4 – Water Supply

Climate Change: The discussion of the impacts of potential climate change in the CWP is still difficult to understand (starting on page 67). In particular, Figure 4-9 creates confusion rather than understanding. We suggest Figure 4-9 be replaced with the following simple statement:

"91 percent of the climate scenario runs show that crop irrigation requirements will increase in the future and two thirds of the runs show there will be less runoff in the State."

We believe the "Uncertainties affecting supply" Section should include the following concepts:

- discussion of possible programs to assist smaller water providers to develop "climate change" adaptation plans, and

- the potential need for the construction of additional storage projects to mitigate the impacts of climate change.

Storage: Pages 71-75 are the primary pages within the CWP devoted to the subject of storage, which is then referred to occasionally in other places. The last paragraph on page 72 states:

> *"new storage projects may be contentious and face numerous hurdles, including permitting and funding. In many cases, it may be more practical and efficient to reallocate or enlarge an existing dam and reservoir than to build a completely new structure."*

This portion of Chapter 4 focuses on the role of existing storage and the opportunity to rehabilitate or enlarge existing storage while severely discounting the potential and opportunity to develop new storage. It is pointed out on page 72 and Fig. 4-11 and 4-12 that construction of new storage projects and new storage volume has flat lined over the last 30 years. However, the last paragraph of Page 72 proposes a rationale for not building new storage projects and instead suggests only reallocating or enlarging existing projects. There are many newer, important storage options that need to be pursued. The South Platte basin has seen rapid growth in gravel pit storage along with expansion of ASR capabilities and the pursuit of new off rivers storage sites. That language needs to be revised to clearly indicate how important it is to develop "all" types of storage including the storage components of IPPs, new storage projects, and rehabilitating existing projects if we are going to make any real progress in solving both the existing and future "gap."

We believe the Role of Storage section on page 71 through 75 should include a discussion of the following (taken from the IBCC discussion on page 231). We recommend that this paragraph be expanded upon within this section and an action item be added to further the discussion of storage within the CWP.

> *The IBCC defined storage and other infrastructure as a critical cross-cutting topic. Storage can help water users maximize supplies by re-timing water availability. This allows users to capitalize on average and wet years and may increase the possibility of sharing water resources when possible. Storage and infrastructure are also important for minimizing agricultural losses, maximizing the use of conservation and reuse savings, and allowing for additional new supplies. In addition, storage can play a critical role in supporting the environment, particularly in support of endangered and threatened species recovery programs. Moreover, storage is an important element in protecting Colorado's interstate water rights pursuant to its compacts and equitable apportionment decrees. As Colorado plans for its water future and looks ahead to a projected 2050 supply gap, new storage and infrastructure will be needed to share, transfer, store, and convey water for the benefit of all. Additionally, new opportunities for existing storage and infrastructure should be explored to provide maximum utilization for all purposes and ensure compact compliance.*

The BRTs specifically modified the SP-BIP to include storage as one of their Key Elements (SP-BIP Section 5.5.7). The added element is to "Promote multi-purpose storage projects that enhance other South Platte Basin solutions." The BRTs added this element because they understand that success of current IPPs, future projects, and ultimately meeting the agricultural, municipal, industrial, and non-consumptive water supply gap is dependent upon having additional storage. **Given the critical importance of additional storage to meeting the future water supply gap, we suggest adding a new Chapter 6 focusing entirely on Storage** (references to storage in South Platte BIP sections 1.9.4, 3.1.7, 3.2.1.7, and 5.5.8 could be used as a source). The format for chapter discussion should include discussions regarding:

- Flood Control
- Compact Compliance
- Drought Mitigation
- Crop Protection
- Minimizing Buy and Dry
- Ecosystem Health
- Environmental and Recreational Enhancements

Chapter 5 – Water Demands

Under the subsection titled "***State of Knowledge on Water Conservation***" (beginning on page 81), it should be noted that there are limitations to active and passive demand reductions by individual municipalities as outlined by the SP-BIP. Reductions in demand by one municipality may at times actually decrease supplies to other municipalities within the basin and simply redistribute the water supply gap.

Similarly under the subsection titled "***Municipal Reuse***" (page 85), this subsection should note the impacts to existing uses through municipal reuse as outlined in the SP-BIP. The following should be included:

> *Reuse can reduce the amount of return flows which, due to the return flow nature of the system, impacts water right owners downstream, including agricultural, municipal and environmental and recreational uses. An increase in M&I reuse could reallocate water supply gaps within the basin.*

These limitations and impacts should also be noted in Section 6.3.2 of the CWP.

Under the subsection titled "***Overview of Agricultural Needs***" (page 87), it should be highly emphasized here and in other places within the CWP that most of the surface water within the South Platte Basin has already been used for other beneficial uses prior to diversion for agricultural uses. Furthermore, the return flows generated from irrigation have allowed the Basin annually to divert and beneficially use over two times the average supply of water entering the Basin each year.

The South Platte Protection Plan should be included in the list of multi-purpose projects on page 90 that meet multiple needs.

Chapter 6 – Water Supply Management

6.1 - Scenario Planning and Development: Chapter 6 begins with a high emphasis on demand management strategies (conservation and reuse) as "important options to meet current and future needs". The BRTs believe that the CWP should support a balance of solutions, without placing more emphasis on one solution than any of the others. The BRTs recommend that additional multi-purpose storage projects be included under long-term solutions in the paragraph on page 94, as it is the glue that holds all solutions together. Under the "Cooperative Growth" scenario on page 99, the scenario assumes higher densities with mass transit as the ideal, which may be appropriate in a few population centers in the State but cannot apply broadly to much of the South Platte Basin.

6.2 – Meeting Colorado's Water Gaps: Under the "Meet Colorado's Environmental and Recreational Needs" paragraph at the bottom of page 108, the need for protecting recreational opportunities should be included, not just facilities.

On page 134 regarding the agricultural water gap in the South Platte/Metro/Republican Basins, the statement *"The South Platte BIP reexamined potential loss of irrigated lands in the South Platte Basin based on past trends, and indicated a range of 10 to 20 percent for the South Platte Basin"* should be revised to reflect up to 50 percent loss of irrigated agriculture outlined under Portfolio A in Section 5.4.1.1 of the SP-BIP.

The introduction on page 137 should more specifically discuss sufficiency of projects. Table 6.2.4 does not reflect the work completed within the SP-BIP.

Under "*South Platte Basin's Environmental and Recreational Goals"* on page 148, the description does not appear to have been updated for the SP-BIP, and the information provided is not accurate, specifically with respect to sufficiency, as discussed at length in SP-BIP and appendices. The description should include sufficiency discussion along with a discussion of framework for assessment and need for a better gap assessment.

The paragraph on page 150 summarizing the types of new projects implies the projects protect very little, whereas the project information available did not have specific metrics. Clarification is needed. The last paragraph on page 150 indicates there is ongoing E&R work funded under the BIP. This was the case in the first draft, but no longer is accurate.

6.3.1 – Municipal Water Conservation: Regarding a Statewide Conservation Goal as mentioned in Table 6.3.1, the BRTs believe that it is unlikely that one goal will be appropriate for the entire state. By definition, a statewide goal would need to be achievable statewide. The wide range of cultures, community settings, and backgrounds within the state affect lot sizing and landscaping and consequently result in a widely varying per capita water usage that cannot be approached with a "one size fits all" conservation strategy.

The municipal water providers within both BRTs have longstanding conservation practices that are nationally known for their rigor. These providers will continue to pursue increasingly aggressive conservation levels. While the BRTs support ambitious goals to maximize supplies for municipal water suppliers, we also recognize conservation limitations and the need for storage to capture water supplies saved by conservation.

Benefits of Water Conservation: The following additional paragraphs should be included at the end of this section beginning on page 158:

> *"Indoor water use is only approximately 5 percent consumptive while outdoor use is 70 to 85 percent consumptive, though it must be recognized that such M&I outdoor use represents no more than 4% of the total water use. Subsequently, best practices that limit municipal outdoor water use have the greatest potential for reducing the overall water supply gap."*
>
> *"The increase in municipal system efficiency due to conservation and reuse may reduce the water supply available to downstream irrigation users unless new supplies are added from other sources like storage to make up for the loss of water from additional water consumption."*

At a recent South Platte Basin Roundtable meeting, Jacob Bornstein specifically recognized the need for new supplies to make up for reduced return flows which are no longer available due to conservation and reuse efforts.

South Platte/Metro Basin: Within the discussion regarding municipal conservation on pages 168 & 169, the following language regarding the associated impacts with municipal conservation from Section 4.3.1.7 of the SP-BIP should be included in the CWP: *Increased conservation can reduce the amount of return flows which, due to the return flow nature of the system, impacts water right owners downstream, including agricultural, municipal and environmental and recreational uses. An increase in M&I conservation could reallocate water supply gaps within the basin.*

Conservation Stretch Goal: Of specific concern to the BRTs is the municipal conservation "stretch" goal of 400,000 acre-feet statewide by 2050. We understand that the stretch goal is meant to be aspirational and push the envelope. However, the danger of a stretch goal is that it gets used as a precondition for implementing other solutions before it is understood whether the stretch goal is achievable or not. The CWP language needs to be very clear that the quantified stretch goal is aspirational, it is unknown if it can be achieved, and it should not be attached as a condition to implementing other solutions. The CWP needs to be clear on this point so that others, particularly federal permitting agencies, do not view a potentially unattainable stretch goal as State policy and make it a condition of permitting. The BRTs recommend that the CWCB engage the WCTAG (made up of a wide-range of statewide stakeholders including municipal suppliers, conservation activists, and others) that was formed to develop conservation plan criteria and helped develop and refine the 1051 data collection process, be the group that is tasked with developing a uniform approach to setting goals and metrics for that can be used to identify goals and measure progress.

While the 2nd Draft CWP includes a stretch goal for conservation, it does not include a similar stretch goal for storage or any of the other solutions put forward in the CWP. The CWP purports to be an "all of the above" plan where all solutions (conservation and reuse, IPPs, alternative ag transfers, and development of new Colorado River supplies) as well as storage are needed. One single solution is not a silver bullet, and Colorado cannot overly rely on one solution. Including a stretch goal for only conservation is not balanced and is counter to the "all of the above" plan. The BRTs do not believe that it is the intent of the CWP to overly rely on conservation as the solution to Colorado's water challenges. The BRTs recommend that complimentary stretch goals be developed for storage (including surface storage and ASR) between now and finalizing the plan in December, and that the final plan include a recommendation for developing stretch goals for the other solutions. Recommended language for a complimentary storage stretch goal is suggested below in Comments on Draft Chapter 10.

The BRTs recommend the following changes be made to the conservation related Actions beginning on p. 171 and that similar changes be made to corresponding sections of Chapter 10.

1. Add to Action #1 to be consistent with recent efforts by the IBCC and recognizing the importance of local control that is well articulated in other parts of the CWP. The action could read: *the CWCB will adopt policies stating that* water providers will be encouraged to do comprehensive integrated water resource planning geared toward implementing the best practices at the high customer participation levels, as defined in SWSI. This planning will be one of the components that shall be considered to achieve state endorsement of projects and financial assistance. This planning allows for flexibility by the local water provider to do what is technically, economically, and legally practical for their system as not every conservation practice is appropriate for every community.

2. Action #5 - to help address the concerns described above, rewrite this action to read: *"Adopt a stretch goal to encourage demand-side innovation that is aspirational and places Colorado at the conservation forefront. Support a stakeholder process that assists local water providers in selecting and implementing locally appropriate conservation best management practices and monitors the achievability of the stretch goal over time."*

6.3.4 – Agricultural Conservation, Efficiency, and Reuse: This section correctly states that increased irrigation efficiency does not add any new water and in fact may decrease available water as it increases on farm consumptive use and decreases return flows in water short systems. When advocating for reduced diversions to benefit instream flows, the CWP should make sure to note that the current agricultural diverter can't continue to call for their full decreed flow rate and then proceed to leave a certain amount of water in the river because of a volunteer flow agreement. It should be noted that such "call" could prevent water from being diverted by an upstream water right in order to pass to a downstream more junior water right all in the name of "enhanced environmental flows." Proper administration should be stressed to ensure that injury to vested water rights is avoided.

The "Saved Water" discussion (pages 192-193) should indicate that saved water can only benefit the stream between the original diversion point and the point of historic return flows.

6.4 – Alternative Agricultural Transfers: The reference on page 216 to the approximate yield from ATMs within the SP-BIP is incorrect. The correct value is 30,000 acre-feet.

6.5 - Municipal, Industrial, and Agricultural Infrastructure Projects and Methods: On page 228, the "Primary Message" of the South Platte Basin is missing the key concept of multi-purpose storage.

Under action #12 "**Framework for Evaluation of Agricultural Transfers**" on page 241, it states that "*a framework for the evaluation of agricultural transfers will be developed from a technical and legal perspective before consideration of requiring such an evaluation*." On page 238, under the IBCC recommendations, a similar concept is included. However, the IBCC recommendation includes a good description of several initial concerns with this concept. The BRTs reiterate these concerns, particularly the fact that requiring such an evaluation could encroach on private property rights and become a permitting hurdle functioning like an Environmental Impact Statement (EIS). The BRTs do not currently believe that such a framework would be helpful and recommends removing Action #12 on page 241. If the Action is not removed, the BRTs recommend that the Action be revised to say "*a framework for an evaluation of agricultural transfers may be developed. In order to help determine if such a framework is appropriate, CWCB will host a stakeholder group to provide input from a technical, legal, and policy perspective. The stakeholder group will include local government, agricultural producers, municipalities, and environmental interests, and will identify and document the pros and cons of developing a framework prior to embarking upon its development.*"

6.6 – Environmental and Recreational Projects & Methods: The BRTs would suggest the following revisions within this section.

- The discussion of the analysis should highlight the identified need for better environmental and recreational "gap" assessment. (p. 262)
- The technical work should include better assessment of the current state of environmental and recreational needs, as was highlighted at nearly every public outreach meeting. (p. 265)
- The multi-purpose projects discussion includes identifying local or seasonal gaps, this should be done on a basin-wide/state-wide level to help determine the E&R gap. (p. 265)

- Funding should include funding for E&R assessments and filling in data gaps. (p. 266)

Chapter 8 – Interbasin Projects and Agreements

We understand that the second Draft of the CWP states that the CWCB will monitor ongoing conceptual framework discussion and consider adopting the conceptual framework (p. 319). The BRTs understand that language changes adopted at the 8/25/2015 IBCC meeting, if incorporated, may address BRT concerns with language tying potentially unachievable conservation levels to all new M&I water projects. Even with wording changes, the BRT's recommend that the CWCB not adopt the framework as it is a work in progress that may be modified as dialogue continues. Further, the implementation of any specific project will be dependent on permitting requirements and negotiations of the parties involved in the specific project.

- The State should develop a collaborative programmatic approach to assure Colorado continues to meet its compact obligations while maximizing Colorado's use of its Colorado River Compact entitlement. This collaborative programmatic approach should be market driven to minimize economic impacts of compact curtailment. The "Actions" included in the Plan indicate that the CWCB will uphold Colorado's compact entitlements and balance development of these entitlements with the risk of a compact deficit in the Colorado River System. The BRTs support these actions but recommend they be supplemented with one or more "Action(s)" that align state policies to develop and beneficially use these compact entitlements.
- Demand management efforts should first be based on voluntary, temporary, and compensated reduction in eastern and western slope consumptive use.
- The State should continue to support the exploration of voluntary, compensated Water Banking that helps to maintain the viability of West Slope agriculture while helping to protect critical water uses from drought curtailment under the Colorado River compact. Colorado River Compact compliance requirements and Colorado River operational challenges resulting from prolonged drought conditions within the River Basin can threaten the certainty of the state's Colorado River water supplies. To help East Slope cities make the most use of their existing Colorado River supplies including reuse, a stakeholder driven demand management program needs to be developed for the Upper Basin of the Colorado River to avoid involuntary curtailment of water uses. Avoiding curtailment will help protect West Slope agriculture, whose rights may be curtailed, from buy and dry by municipalities on both slopes. There may also be a need for an administrative protocol designed to achieve required curtailment levels should conservation programs or other voluntary curtailment programs fail to achieve necessary results. Stakeholder input thereon should be sought. Definition of this administrative protocol is needed so that potentially affected entities can plan alternative courses of action in response to such an eventuality.

Chapter 9 – Alignment of State Resources and Policies

9.1 – Protecting Colorado's Compact and Upholding Colorado Water Law: The BRTs recommend adding language to the section "The State of Colorado will continue to uphold Colorado's water entitlements under Colorado's compacts, equitable apportionment decrees, and other interstate agreements." As mentioned above, the BRTs support this action, but recommend that the State of Colorado not only uphold Colorado's compact entitlements, but align state policies to develop and beneficially use these water entitlements.

9.2 – Economics and Funding: Planning for the future should include the understanding of cost implications of implemented solutions. The BRTs believe that cost implications should be considered throughout the plan. The BRTs also believe that increasing Colorado's ability to fund important water projects is a meaningful outcome of the CWP.

9.4 Framework on More Efficient Water Project Permitting Processes: This section has greatly improved from the first Draft of the CWP and the BRTs appreciate CWCB's work on this important section. The following comments are meant to further strengthen this section:

- The Section could be made clearer by separating the State 401 certification and Wildlife Mitigation (122.2) process discussions.
- The State should commit to supporting project proposals once they have successfully completed the State permitting process.
- In the "Preliminary technical review for state processes" discussion beginning on p. 369, add language that makes it clear that for projects that require NEPA analysis, State agencies should rely on NEPA studies and analyses to make their decisions. This was recommended by the South Platte/Metro BIP and is implied in the current language, but it should be more clearly stated to ensure coordination and involvement of state agencies in NEPA so additional technical analyses that result in added expense and delays are not needed to meet state requirements. The BRTs also recommends that this section describe any changes to State law that are necessary to ensure this consistency.
- Concerning 122.2, the Plan states on page 366 "The legislation that created the 122.2 process for the mitigation of fish and wildlife impacts associated with water project development is somewhat constraining in that official communications between the project proponent and CPW staff are not initiated until after the release of a Draft EIS." In reading the pertinent statute and the associated Rules, we see significant benefit resulting from communication beginning before the release of the Draft EIS. We believe the process should be similar to the proposed 401 Permitting Process with communication occurring very early in the process prior to the DEIS. If the State does believe it has limitations on communication based on policies/rules, we would suggest the rules be amended to clarify that early communication is allowed with the goal being formal submittal of the plan shortly after the DEIS.
- The BRTs supports #1 under Actions that calls for working with permitting agencies to determine how to make them more efficient and effective. The BRTs recommend language specifically recommended in the South Platte BIP be added to this Action specifying a "date certain" for this to occur, and including specific goals and timeline for completion of these goals.
- The BRTs encourage the CWCB to add a subsection to this section of the CWP including recommendation to improve the Federal Processes. Although Colorado cannot unilaterally implement changes to Federal Processes, it can collaborate with Federal agencies on certain reforms, and Colorado's congressional delegation can work with other states to effect changes. The South Platte/Metro BIP Section 5.5.11.1 can serve as a starting point for this subsection of the final CWP.
- The BRTs recommend that the CWCB add the following specific recommendations from the SP BIP to this section of the CWP:
    - We would encourage the State to select the Department of Natural Resources as the lead agency for projects because DNR has both expertise and interest in the wide variety of issues associated with the NEPA process through its Water Conservation Board, Division of Water Resources, Parks and Wildlife, and State Land Board.
    - Current 401 Certification regulations require an anti-degradation review of proposed water projects. Such reviews are designed for and are applicable to permitting of point

source discharge, such as wastewater treatment plants. These analyses are difficult to adapt to water supply project evaluations and reviews. This inconsistency requires extensive additional analyses and studies and causes additional incurred costs by the project proponent and increased time for State employees to review projects. Consideration should be given to tailoring state statutes and regulations to specifically meet the needs for permitting water supply projects.

- Changes should be made to applicable Colorado statutes and regulations in an effort to bring efficiency to the permitting process. Regulations or guidance should specify that state input into any NEPA compliance actions associated with water projects should begin early in the process and continue throughout the process to conclusion.

Of most importance, we believe the Plan should not inadvertently add another barrier to moving through the permitting process. Based on conversations with State staff at Roundtable and other meetings, it is our understanding that this is not the intent. Thus, the Plan should state clearly at the beginning of the Permitting Section that nothing in the Plan should be interpreted as setting state policy adding requirements or standards either at the local, state or federal level for obtaining necessary permits for projects.

Chapter 10 – Critical Action Plan

The BRTs believe that this is an important section that should include specific actionable items that will make a meaningful difference in implementing the BIPs and CWP.

10.1 Colorado's Water Values

The description of Colorado's Water Plan water values does not include recreation in the description. (Number 1 on p. 398)

10.3 Strategic Goals and Actions

Ia. Align Existing Funding

- #2- include partners outside of water, such as those in transportation and other sectors who have been implementing P3s
- #3 - A common grant inquiry process across agencies would also be of great benefit to M&I and agricultural project proponents. The BRTs recommend developing this process for all types of projects and methods.
- #6 – Reword this action to identify specific areas were CWCB becoming a project beneficiary can make a meaningful difference in implementation of the CWP.

Ic. Explore New Funding Opportunities

- #2 – Reword action to "In order to encourage and support regional partnership or multipurpose projects, establish a state repayment guarantee fund"

IIa. Improve Permitting Processes

- #1 – Define a lean event. We recommend making this item actionable by specifying who would be on this task force, specific goals for the group that build on and do not duplicate previous efforts, and a timeline for providing specific recommendation on how to make permitting more efficient and effective.

- New Item–For projects that require NEPA analysis, identify and approve legislative or administrative changes necessary to ensure State agencies participate as a cooperating agency,

designate DNR as lead agency, coordinate when appropriate, include issues in scoping, and rely on NEPA studies and analyses to make their decisions.

IIb. Promote Protection and Restoration of Water Quality

- #1 – This action item includes evaluating water quality impacts from BIP proposed projects, exploring graywater and reuse, and supporting green infrastructure. These appear to be separate issues. Evaluating water quality impacts from BIP proposed projects is already done through the 401 certification process. If additional or redundant evaluation is being proposed, the BRTs have concerns about these additional requirements.

- The BRTs recommend including two Critical Actions (or making the general statements in the current draft more specific) to address direct potable reuse and desalination/brine disposal. Section 7 may need to be revised or supplemented to support these actions. Critical Actions could include:

    - Establish a regulatory framework through the CDPHE for direct potable reuse to ensure the technical feasibility and safety of this option for meeting future M&I water needs in Colorado.

    - Develop a collaborative program between CWCB and CDPHE to evaluate and promote new and emerging technologies for inland desalination and compare the feasibility, costs, and impacts of different brine/waste disposal methods.

IId. Meet Colorado's Water Gaps

- Recommend additional critical action: "In addition to presently proposed IPP's, explore opportunities for new multi-purpose storage and infrastructure to meet water supply gaps."

IIe. Promote Additional Storage and Infrastructure

- #2 – Reword this action item to: "Assess storage opportunities (both surface storage and ASR) to determine where existing storage can and should be expanded or rehabilitated to help meet Colorado's water gaps."

- If the conservation stretch goal is retained, the BRTs believe that there should be a similar storage stretch goal. Similar to the conservation stretch goal, it should state ""Adopt a stretch goal to encourage innovative surface storage and ASR solutions that places Colorado at the water management forefront. Support a stakeholder process that examines options for local water providers to establish storage targets consistent with the stretch goal and the amount of storage possible given past projects and local opportunities."

- Recommend addition of a critical action: "Support and assist the basin roundtables in moving forward planned infrastructure projects through technical, financial and facilitation support when requested by project proponent"

- Recommend addition of a critical action: "Promote the development of new local and regional storage and infrastructure projects that both divert and retain native unappropriated waters where feasible and store water supplies from other multipurpose projects and methods to meet water needs."

IIIa. Increase Municipal Conservation and Efficiency

- #1 - To be consistent with recent efforts by the IBCC and recognizing the importance of local control that is well articulated in other parts of the CWP. The action could read: *the CWCB will adopt policies stating that* water providers will be encouraged to do comprehensive integrated water resource planning geared toward implementing the best practices at the high customer participation levels, as defined in SWSI. This planning will be one of the components that shall be considered to achieve state endorsement of projects and financial assistance. This planning allows for flexibility by the local water provider to do what is technically, economically, and legally practical for their system as not every conservation practice is appropriate for every community. #4 – As previously stated, the BRTs recommend that the CWP be a balanced plan. If the conservation stretch goal is retained, a stretch goal for other solutions should also be implemented, especially storage, or the plan should not include stretch goals at all.

- #5 – We recommend that this action item addressing tax incentives for outdoor conservation be modified to include tax incentives for indoor and outdoor conservation.

IIIc. Integrate Land Use and Water Planning

- Recommend adding a critical action item: "Promote the development of a certification and ongoing training program for landscape/irrigation professionals."

IVa. Maintain Agricultural Viability and Efficiency

- #2 – The BRTs are concerned that a "framework for an evaluation of agricultural transfers" may encroach on private property rights and become a permitting hurdle functioning like an EIS. We recommend removing this action item. If it is not removed, it should be revised to say "Host a stakeholder group to help determine if a framework for an evaluation for agricultural transfers is appropriate from a technical, legal, and policy perspective."

Vb. Enhance Environmental and Recreational Economic Values

- Recommend adding a critical action item: "Support further assessment of the current state of the environmental and recreational attributes, and assess what is needed to address the gaps."

VId. Protect Compact Entitlement and Manage Risks

- We recommend that this title be changed to "Protect Compact Entitlement, Develop Entitlement, and Manage Risks"

- #1 – We fully support this action and recommend CWCB assess the need to increase the litigation fund rather than simply maintain it.

- #2 – Recommend adding the italicized phrase to this Action: Continue to comply with Colorado's compact and equitable apportionment decrees and support strategies to proactively manage compact obligations *and develop Colorado's compact entitlements*.

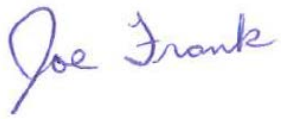
- #4 – Recommend modifying this action to "Monitor the ongoing conceptual framework discussion."

- #5 – Recommend adding the italicized phrase to this Action: Prioritize the development of a programmatic approach to prevent a Colorado River Compact deficit *while fully developing Colorado's compact entitlements*.

Thank you for the opportunity to comment on the Second Draft of the Colorado Water Plan.

Respectfully Submitted,

Joe Frank, South Platte Basin Roundtable Chair



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Barbara Biggs, Metro Roundtable Chair

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PUBLIC INPUT ITEM 107

Dolores River Boating Advocates

P.O. Box 1173
Dolores, CO 81323
970-560-5486
info@doloresriverboating.org

September 14, 2015

ATTN: Colorado Water Plan Comments for Draft 2

Dolores River Boating Advocates is a grassroots organization based in Dolores, Colorado that focuses on protecting and preserving the natural and recreational values of the Dolores River. We have over 500 supporters and followers from across the state and beyond that share an interest in our mission, which is to *improve flows, restore the natural environment, and permanently protect the Dolores River for whitewater boating*. We work to achieve our mission through outreach and education, stewardship, advocacy and partnerships.

We are writing regarding the second draft of the Colorado Water Plan. We realize the extensive work that has been done to arrive at this point with the plan, and we appreciate the comments that have been addressed from the first draft, however we feel the plan is still lacking in conservation measures that will help Colorado move into the future in a sustainable manner.

While agricultural and municipal uses seems to have a strong emphasis in the plan, we would like to see an equally strong emphasis on conservation and river recreation, both of which support our state's economy and local economies. Recreation itself is a significant contributor to the state's overall economy and workforce, as identified by CWCB: *Water-related activities, such as fishing, paddling, commercial rafting, wildlife viewing, camping, skiing and other snow sports, together infuse between $7 and $8 billion into the state's economy and employ about 85,000 people across Colorado* (Colorado Water Conservation Board website). As such, we would like to see the state partner with groups like Dolores River Boating Advocates and American Whitewater to assess recreation needs and support our important recreational economy and heritage. American Whitewater's recreational flow needs assessment for rivers throughout the state should be integrated into the state's overall water needs assessment. Additionally, Stream Management Plans need to specifically address the conservation and recreation values of each watershed, along with the challenges. For instance, the "Basin Challenges" section in Chapter 3 for the Dolores River falls short of addressing the ecological and recreational challenges of the river including the ecological and economical implications resulting from McPhee Dam, which have been significant for our region such as:

- Three native fish species that have become threatened since the construction of the dam, as identified in "A Way Forward" native fish studies (see ocs.fortlewis.edu/drd)
- The maximum of 3,257 annual commercial users dropped to an average annual commercial use of 383 the decade following the completion of McPhee Reservoir (CROA)
- Pre-dam estimates of a direct impact of $96,000 annually to the local community with an economic impact of $246,000* dropped to an economic impact of approximately $13,000 in a 2010 study (CROA)

**Economic Multiplier: The number of times a dollar is spent (2.56 times) in the local area before being spent outside that area (Colorado Tourism Board).*

Additionally, the Critical Action Plan does not distinctly describe how the Colorado Water Plan will help support environmental and recreational economic values, but rather remains elusive about the state's important recreation economy:

> *Critical Actions to Enhance Economic Values: Develop a plan that compiles and develops near-term projects and methods to support economically important water-based recreation.*

We are unclear on what this actually implies. We would like to see this objective further defined in the water plan and not limited to near-term projects since recreational goals can also be long-term with unforeseen trends just like other industries. We offered specific ideas in our initial comments, such as a recreation plan for the Dolores River.

We are also discouraged to see an emphasis on new storage and transmountain diversions, which are not sustainable practices and do not address the real issue of water supply, but rather create greater challenges by taking water away from a river. It is integral for the ecological health of a watershed to keep water in its rivers. Section E in Chapter 6 does not address the ecological challenges that water storage creates, but rather supports "opportunities" from storage projects. This objective requires a more thorough and honest assessment.

Additionally, we would like to see agricultural conservation practices implemented into the state plan and funding allocated accordingly through the Basin Implementation Plans. Agriculture far exceeds other consumptive uses of water, accounting for 89% of consumptive water use, and takes approximately 75% of the state's water supply. With more efficient agricultural conservation practices, the state would have more water for other uses. State policies must support water conservation within and outside of the state water plan with a consideration on meeting the environmental and recreational gaps identified in the plan.

Finally, Colorado needs to reevaluate current water law and the associated practices. The "use it or lose it" mandate is not serving or supporting immediate goals, nor will it support a sustainable future for the state. Water leasing for conservation and recreation is a viable option and alternative to "buy and dry," which threatens the ecological health of our landscapes. We must be visionary rather than reactionary with our valuable resources. Replaying out-of-date practices that move water out of watersheds has proven shortsighted and damaging, as seen in the Dolores River watershed with the native fish species. "Facilitating Alternative Transfer Methods" in Chapter 6 is a good start to this effort, and water districts must support these alternatives.

Colorado is a unique and celebrated state because of the mountains, rivers and natural landscapes that can be found here. These attributes have drawn people to a variety of livelihoods and lifestyles that have become our heritage. The Colorado Water Plan must equally represent these values in a thoughtful and meaningful manner. While it is a tall order to reflect this diversity, it is imperative. In summary, we feel that recreation and conservation have not been adequately addressed in light of the values they provide.

As John Wesley Powell concluded during his notorious surveys of the West, we must live within the means of our watersheds. Growing beyond the carrying capacity of the watershed is simply not sustainable. We need to work together to keep our watersheds vibrant and sustainable for future generations. Honestly assessing our current practices and improving our consumptive uses through conservation practices is the only way to achieve this. We hope the Colorado Water Plan can convey a true conservation perspective that will protect all of the livelihoods and lifestyles that make our state so special.

Sincerely,

Sam Carter, DRBA Board President

PUBLIC INPUT ITEM 109

Garald L. Barber, Sole Proprietor
9040 Strand Way
Colorado Springs, CO 80920

September 14, 2015

Via Electronic Mail

Mr. Alan Hamel
Arkansas River Basin Representative
Colorado Water Conservation Board
1313 Sherman Street
Denver, CO

Re: Comments on Colorado's Water Plan

Dear Mr. Hamel:

I am writing to share my personal perspective on Colorado's Water Plan (CWP) derived from my ten year membership on the Arkansas Basin Roundtable. These are my own, individual comments and do not represent the views of the various entities I have been associated with in the past or presently.

There are a variety of meanings now attributable to the term sustainability. For my purposes, I am referring to the idea of sustaining Colorado's economy. The entire dialogue this past decade has been a conversation about "gaps," with the focus on meeting future needs. My suggestion is that an alternative perspective is appropriate, one focused on keeping—and where required replacing—the water resource assets we currently possess. Action is required now. If these challenges are not addressed by the year 2020 the consequences may be irreversible. From that viewpoint, the greatest threats to continued economic vitality in Colorado derive from three sources:

1. A state-wide need for restoration of watershed health, given that the snowpack is our greatest and most critical storage vessel;
2. The need to replace groundwater in Counties dependent on Denver Basin aquifers or designated groundwater basins, and;
3. Failure to generate new or expanded funding sources, coupled with a greater fiscal management role for the Colorado Water Conservation Board, to meet the challenges of deteriorating, aging infrastructure.

Comment 1. **CWCB should convene all stakeholders who depend on the snowpack in Colorado's forest for water supply with the objective of generating and implementing a Plan of Action to restore watershed health.**

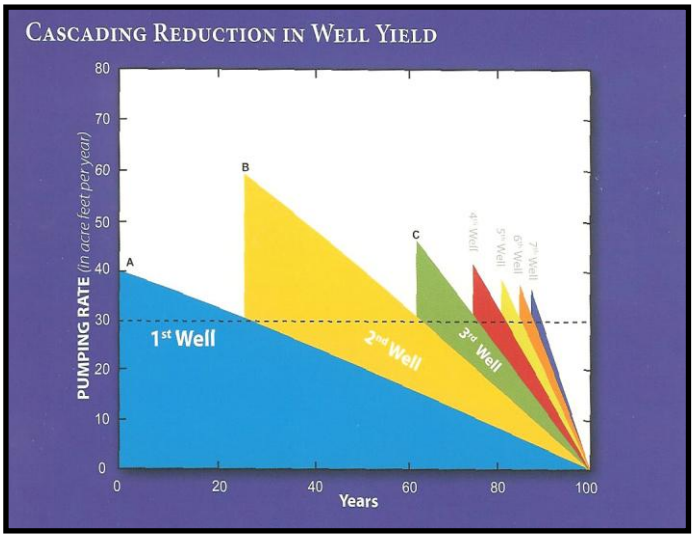
At the turn of the last century, President Teddy Roosevelt sold the proposition of national forests for preservation of watersheds, which were a commonwealth for all citizens in dire need of protection. Restoration of watershed health, in the face of climate variability, is a task equivalent to, and worthy of, the largest water projects in Colorado's history. The Colorado Water Conservation Board has standing as the convening organization to create a state-wide Plan of Action. Invite the appropriate state and federal agencies, along with Colorado stakeholders, but get an actionable plan in place with adequate funding. Start now to solve the problem before it becomes a crisis. If eighteen western states, with 40 Million citizens, are truly dependent on the headwaters in Colorado, this is an opportunity for leadership.

<u>Comment 2</u>. Replacement of depleted groundwater is now critical, with many small water providers unable to address this issue. There must be help in some form to avoid adverse economic impacts in the immediate future.

Estimated % of AV Dependent on Depleting Groundwater		
County	**2014 AV**	**% of Total**
Arapahoe County	$4,322,376,396	6.8%
Douglas County	$7,115,273,071	11.3%
El Paso County	$1,526,005,948	2.4%
Total	**$12,963,655,415**	**20.5%**
	2014 AV	**% of Total**
Front Range	$63,130,739,578	20.5%
Colorado Total	$91,574,964,727	14.2%

In 2014, the total Assessed Valuation of the State of Colorado was $91,574,964,727[1]. The ten (10) Front Range Counties make up about two-thirds of the total assessed valuation of the State. Of those, Arapahoe, Douglas and the northern portions of El Paso County are nearly 100% groundwater dependent. If it is reasonable to use assessed valuation as a measure of economic activity, then as the table shows, about 14% of the State's economy is dependent on a non-renewable resource. When considered against just the ten Front Range Counties, these areas are 20% of the total.

There are many challenges to replacement of this water supply, not the least of which is that it truly requires replacement. The 100 year life of the Denver Basin aquifers is a statutory fiat. A realistic life for a well is closer to 40 years tops, at which point a significant capital investment is required to continue operating the well as before. Homeowners connected to the system believe they have already paid for continuous service, unaware that as operating costs are increasing additional capital costs are imminent, which will further erode the fiscal capacity of the water provider to seek alternatives.



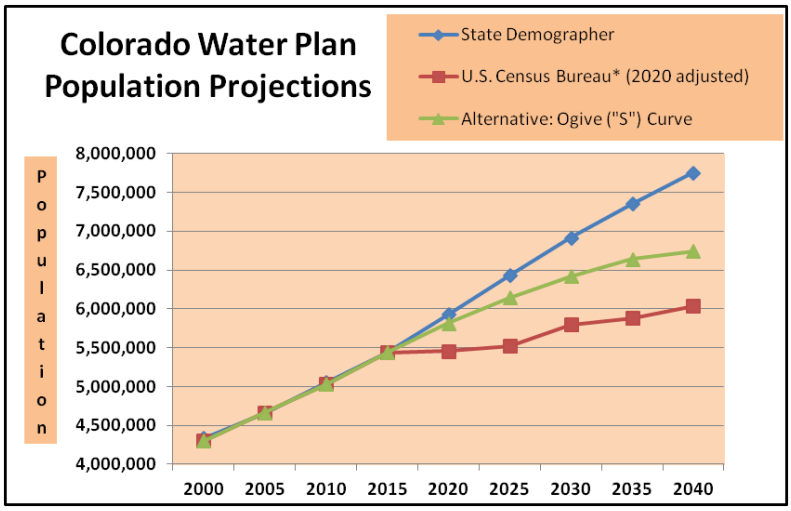
The WISE Partnership is an important first step in addressing this need. However, that project's water will mitigate about 20% of the overall water to be replaced in Arapahoe and Douglas Counties. In northern El Paso County, such a regional, collaborative solution like WISE remains aspirational at best.

[1] Colorado Department of Local Affairs, Division of Property Taxation, "A Report to the State Board of Equalization and the General Assembly: Estimated Residential Assessment Rate for 2015-2016, April 15, 2015.

<u>Comment 3</u>. The funding modalities of the past 75 years will not meet the funding needs of the next decade. Implementation of a strategy to garner new revenue sources for water resource infrastructure is needed now, along with project-centric as opposed to proponent-based financing models.

Talking about money is not the same as getting the money. One of the great challenges ahead for Colorado's water resources is the deferred maintenance on important reservoirs and ditch systems. Many of these facilities are well into their second century of service. Economic constraints in the agricultural community have limited revenues, causing an inability to maintain these structures, particularly private reservoirs, which offer collateral environmental and recreational benefits.

The scale of the need for funding, especially if action is taken on Comments 1 & 2, is large. Dollars committed to solutions in the next few years will pay dividends for decades; delay will see the extent of the problem balloon beyond the capacity of the economy to address the needs. Private sector capital wants to participate in the solution. The CWCB should investigate, and then define, its role in managing the risks and rewards of public-private partnerships.



<u>Conclusion</u>. Over the last ten years, the dialogue and technical studies have focus on the Year 2030, then the Year 2050, both important milestones in defining the future gap. However, there is a marked difference between the Colorado State Demographers Office (SDO) and the U.S. Census Bureau's estimates of future population, although both are based on continuous growth through the Year 2040. What if the population future of Colorado is an S-curve[2], where population eventually stabilizes? In that scenario, the gap can likely be addressed, but not if we fail to act now to preserve the fundamental components of our water resource assets in good condition. My conclusion suggests the next five years are important years for leadership and vision from the Colorado Water Conservation Board.

Sincerely,

Garald L. Barber

[2] **S-shaped growth curve (sigmoid growth curve)** A pattern of growth in which, in a new environment, the population density of an organism increases slowly initially, in a positive acceleration phase; then increases rapidly approaching an exponential growth rate as in the J-shaped curve; but then declines in a negative acceleration phase until at zero growth rate the population stabilizes, http://www.encyclopedia.com/topic/S-shaped_growth_curve.aspx.

PUBLIC INPUT ITEM 110

Memorandum

To: Alan Hamel

CC: Ark RT members, Brent Newman-CWCB staff

From: Gary Barber

Date: September 9, 2015

Re: Comments from the Arkansas Basin Roundtable on the Final Draft of the Colorado Water Plan

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Alan:

The following recommendations were approved by consensus today at the Arkansas Basin Roundtable.:

1. Chapter 3, page 38. Please revise the list of "Basin Challenges," from the current version, shown below, to the text that follows.

Basin Challenges: The Arkansas Basin will face several key concerns and challenges pertaining to water management issues and needs over the next 40 years, which are identified as follows:

- Arkansas River Compact requirements, existing uses, and water rights result in little-to-no water availability for new uses. All new uses, and many irrigation efficiency improvements, require augmentation.
- Growth in the headwaters region will present challenges to securing augmentation water for new demands.
- Concerns over agricultural transfers and the effects on rural economies are substantial in the lower portion of the basin downstream of Pueblo Reservoir.
- Recreational in-channel diversions or water rights for recreation will have an influence on the development of augmentation plans for agricultural transfers. The Arkansas River has been called the most rafted river in the world, but those recreational flows could be threatened unless there is continued, thoughtful collaboration on water resources.
- Concerns over water quality and suitable drinking water exist in the lower basin.
- Possible federal listing of the Arkansas darter fish as a threatened or endangered species could affect water management in the basin.
- Replacement of existing municipal supplies, plus growth in urban areas will result in an increase in the demand for municipal water supplies.

New Text:

- ***All new uses require augmentation. Increase irrigation efficiency, i.e. conversion from flood to center-pivot irrigation for labor and cost savings, will require 30,000-50,000 acre-feet of augmentation water in the coming years.***
- ***Replacement of municipal water supplies that depend on the non-renewing Denver Basin aquifer and declining water levels in designated basins is becoming critical, exacerbated by continued growth in groundwater-dependent urban areas.***
- ***Concerns over agricultural transfers and the effects on rural economies are substantial in the lower portion of the basin downstream of Pueblo Reservoir.***
- ***Collaborative solutions, as demonstrated in Alternative Transfer Methods pilot projects, are needed to forestall or avoid loss of irrigated acreage in agriculture.***
- ***As the most rafted river in the world, the Arkansas River Voluntary Flow Agreement provides a bench mark for cooperative integration of municipal, agricultural and recreational solutions in support of recreational boating and a gold medal fishery. This successful collaboration provides a model for meeting other multi-purpose basin needs and intervention by federal or state agencies to modify this solution may be counter-productive.***
- ***Concerns over water quality include drinking water in the Lower Valley and the impact of fires and floods in the Fountain Creek watershed.***
- ***Rural areas within the Arkansas Basin have identified water needs, but face challenges in marshalling resources to identify and implement solutions. Support from the Roundtable and CWCB is needed.***
- ***The great majority of surface storage reservoirs in the Arkansas Basin were constructed between 1890 and 1930. Many of these facilities are in need of repair or restoration.***
- ***Regional solutions are emerging, like the SECWCD Regional Water Conservation Plan, which can serve as a model for future regional initiatives to address the needs of the Arkansas Basin.***

2. Page 223. Chapter 6. Replace: "*Roundtable members believe that traditional storage is the best avenue to meet the basin's supply needs, for both consumptive uses, as well as environmental and recreation."* New Text: ***Roundtable members believe preservation of existing storage is critical to continuing to meet the basin's supply needs for all uses along with development of new storage. New storage can include reoperation of existing structures, regional consolidation of existing structures in need of repair along with underground storage (ASR).***

3. Page 223. Chapter 6. Add project cost estimate to Table 9.2-1

4. Page 257. Chapter 6. Add project cost estimate to Table 9.2-1

5. Page 330, Chapter 9. Table 9.2-1: Project Costs Identified in the Basin Implementation Plans. The CWP Second Draft says that much of the information for this table is forthcoming. $85,000,000 is currently shown for the Arkansas, which may reflect the insert box on page 223 ($84,700,000). Please update the table to reflect these projects:

Project Title	Env., rec. or water quality	Municipal & Industrial	Agriculture	Multi-purpose projects	Total
Arkansas Conduit	$150,000,000	$250,000,000			$400,000,000
PPRWA Infrastructure Phase I estimate				$277,000,000	
Arkansas River Watershed Collaborative	$30,000,000				
Fountain Creek Restoration and Flood Control	$100,000,000				
Upper Arkansas Multi-Use Project				$50,000,000 Needs confirmation	
Regional Water Quality Working Group	$200,000				
ATM/Super Ditch projects including pilots and recharge ponds			$10,000,000		
Page 257 insert box showing 135 projects for $65Million	$65,000,000				
Southern Delivery System Phase 2				$300,000,000	
Eagle MOU				$100,000,000	

6. The majority of the footnotes reference the Draft BIP of December, 2014. The final document is called the 2015 Edition of the Arkansas Basin Implementation Plan, and was delivered on April 16, 2015. Please find and replace the footnote references to reflect the project team that completed the final document. We request: ***"2015 Edition, Arkansas Basin Implementation Plan, CDM Smith, CH2M, Sustainable Practices, Peak Facilitation, G. Barber, Project Manager."***

PUBLIC INPUT ITEM 111

Dear CWCB Members:

Thank you for the opportunity to comment on the Second Draft of Colorado's Water Plan.

Colorado's Water Plan deals with varied and complex issues. Shepherding the plan to its current state was obviously a monumental task. Those directly involved should be commended. In the Second Draft, I particularly appreciate the way the new critical action plan in Chapter Ten ties the entire plan together by referring back to details presented in earlier sections.

I'm grateful that the plan already addresses many of my personal concerns. Although I recognize that such a far-reaching plan cannot possibly satisfy the diverse interests of everyone, I naturally hope that a few of my other concerns can be addressed as well. Please consider the following suggestions as you continue developing the plan:

Protecting Riparian Ecosystems

Colorado's prior appropriations water policy fails to recognize that steams, rivers and the ecosystems they support were here long before municipalities, industry and agriculture. In a state that relies heavily on recreation and tourism, maintaining stream health is clearly a beneficial use of water. Colorado law should be modified to allow individuals and organizations to use their water rights for reestablishing and maintaining healthy ecosystems.

Colorado's Water Plan should include a goal of establishing minimal standards for maintaining stream and watershed health. I support the revised definition of “resilience” suggested by Audubon Rockies and several other conservation organizations. This kind of resilience should be backed by specific science-based management goals that the current plan seems to be lacking.

Until science-based minimal standards for maintaining riparian health can be established and promulgated, “new water” should be obtained through efficiency, conservation, and reuse instead of additional trans-mountain diversions or other infrastructure projects that could (and likely would) damage or destroy riparian ecosystems.

The second draft's suggested goal of allocating $1 million annually to

support stream and watershed management is pitifully low – less than 20 cents per capita. Surely a state that has a median annual household income of more than $57,000 could and should afford to spend more to revitalize and protect its natural aquatic resources.

Funding Issues

The appropriateness of using a container fee to support water development is questionable. The connection between containers and water demand is obscure at best. Although a possible side effect of offsetting the negative environmental impact of beverage containers is a commendable goal, a container fee would not be as effective as requiring refundable deposits on containers.

The practicality of introducing a container fee is questionable as well. Such a proposal would almost certainly be strongly opposed by commercial interests like beverage companies capable of funding massive advertising campaigns. In the past Colorado has rejected proposals like container deposit requirements and fees for grocery bags. It seems unlikely that voters would support a container fee.

I'd prefer a funding alternative that does not appear to be suggested by the plan: a statewide fee based on water consumption. This fee should apply to all water consumption – not just municipal and industrial. Agriculture accounts for the vast majority of water use in Colorado. Center-pivot irrigation systems spewing out water in the heat of the day is a common sight in agricultural areas. By watering crops at different times or using less wasteful irrigation methods evaporation could be reduced and return flows could be enhanced with little impact on agriculture. A fee based on consumption would encourage conservation without mandating it. Some downstream water users are concerned about the potential impact of upstream reuse on their water supplies. In addition to funding general water development, income from a consumption-based fee could be used to develop replacements for flows that are diminished by upstream reuse.

Water Quality

The Gold King Mine/EPA/Animas River disaster this summer makes it clear that Colorado's Water Plan should recognize and deal with existing pollution problems. This is not a local issue. The Gold King Mine disaster affected downstream agriculture and communities. Silverton's

appetite for tourist dollars and its ongoing refusal to recognize and deal with pollution problems is a disgraceful disservice to downstream water users. Now Silverton's short-sighted, self-indulgent policies have become a disservice to Silverton as well. It's time for statewide action.

At a time when we should be facing environmental disasters like Gold King Mine that were created by our predecessors, we should be especially careful to avoid creating similar disasters for our successors. The second draft of Colorado's Water Plan contains several references to water required for hydraulic fracturing, but does not appear to raise the issue of how to dispose of fracking waste without contaminating sources of clean water. The next plan revision should address this omission.

Thank you for considering my suggestions.

Sincerely yours,

Robert N. Stocker
2885 S. Gilpin St.
Denver, Colorado

PUBLIC INPUT ITEM 113

AMERICAN WHITEWATER

Nathan T. Fey, Director
Colorado River Program
1601 Longs Peak Ave.
Longmont, Colorado 80501
nathan@americanwhitewater.org

September 16, 2015

James Eklund, Director
Colorado Water Conservation Board
1313 Sherman Street
Denver, CO 80203
Sent via email to cowaterplan@state.co.us

Re: Comments on the Second draft of Colorado's Water Plan

Dear CWCB board and staff:

American Whitewater (AW) appreciates the opportunity to submit comments on the 2nd Draft of the Colorado Water Plan (Plan), and the CWCB's efforts in compiling this resource. With a firm understanding of the important hydrologic needs of various water users and water dependent ecosystems, we recognize the high likelihood that Colorado water supply will continue to decline while both demand and population increase. We believe that the Plan is both timely and valuable, and appreciate that the CWCB has started to identify critical actions that will protect our states primary water values:

- A productive economy that supports vibrant and sustainable cities, viable and productive agriculture, and a robust skiing, recreation, and tourism industry;
- Efficient and effective water infrastructure; and
- A healthy environment that includes healthy watershed, river, streams, and wildlife.

It is clear CWCB staff has been hard at work since January, incorporating input from basin roundtables, the Inter-Basin Compact Committee, and tens of thousands of public comments that highlighted the need for healthy rivers, and water supply alternatives other than large new trans-mountain diversions. Despite all of the progress and many positive additions to the Plan, we believe there remain substantial opportunities for the CWCB to improve the Plan and identify critical actions that will help protect recreational and environmental values across the state.

American Whitewater is submitting general comments on the Colorado Water Plan, and providing specific input on critical actions that can be taken in the near-term to protect and enhance our State's vibrant rivers and recreational industry.

Interest of American Whitewater

American Whitewater is a national non-profit 501(c)(3) river conservation organization founded in 1954. Through our individual members and local affiliate clubs, American Whitewater represents whitewater paddlers across the nation to conserve and restore America's whitewater resources and to enhance opportunities to enjoy them safely. Our membership, staff and board have a keen interest in management of streamflows throughout Colorado, conserving their natural character, and ensuring the outstanding recreational industry these flows sustain are protected. Hundreds of American Whitewater's members reside in Colorado - representing every basin in the state, and actively participate in human-powered whitewater paddling opportunities. In addition, our members from across the country and world regularly visit Colorado's rivers for the quantity and diversity of paddling and natural-immersion opportunities that make our state a world-class recreation destination.

General Comments
Outdoor recreation, including whitewater paddling, contributes $646 billion annually to our national economy and $13.2 billion for Colorado, which generates $994 million in state and local tax revenue.[1] But outdoor recreation is more than just tax revenue – its jobs, careers, and a way of life. It is responsible for $4.2 billion in wages and salaries and 125,000 jobs throughout the state. River based recreation, including fishing, boating, and the enjoyment of healthy riparian areas for hiking, picnicking and camping, is a core part of this economy – all which the draft Colorado Water Plan recognizes. However, the Plan does not address the economic impact of river-based recreation to the State economy, and we encourage the CWCB to honor the recreational value of water by reporting economic impact data by Sector, including Recreation.

American Whitewater requests the CWCB consider an additional near-term Critical Action to address the need for robust Economic Impact data on recreational water use:

Critical Actions to Enhance Economic Values	Section	Partners	When	Type
Compile and fund the development of economic impact data relative to state-wide non-consumptive river-based recreation.	5	CWCB, Dept of Outdoor Recreation Industry, BRTs, interested stakeholders	Near-term	Programmatic

Despite driving the multi-billion dollar river-recreation industry, quantified recreational water needs and uses have been left out of the water-demand equation, or only considered after other uses are fulfilled. As the demands on our limited water supply increase, so does public concern. As reported by the State of the Rockies poll, 51% of Colorado voters view water supply as an extremely or very serious problem[2], and the overwhelming majority of Coloradans say that low levels of water in rivers is a serious problem. We believe this creates an imperative for the CWCB to take steps towards defining and applying a common set of metrics for measuring gaps in our recreational and environmental water needs statewide. Common metrics that provide baseline information on streamflows and whitewater recreation can be applied to evaluating how future water management actions or risk management strategies may impact or enhance our State's recreational values.

Guided Input
I. Chapter 5. Water Demand

Recreation, such as whitewater boating, is a flow dependent recreational use of rivers, and considerable work evaluating flow-recreation relationships has occurred over the last several decades[3,4] Changes in streamflow can have direct effects on the quality of whitewater boating.

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[1] Outdoor Industry Association (2012) Report on Outdoor Recreation Economy
http://www.outdoorindustry.org/images/ore_reports/CO-colorado-outdoorrecreationeconomy-oia.pdf
[2] Colorado College (2012). State of the Rockies, Water Report
http://www.coloradocollege.edu//other/stateoftherockies/conservationinthewest/topicreports/WaterReport.pdf
[3] Brown, T.C., Taylor, J.G., & Shelby, B. (1991). Assessing the direct effects of Stream flow on recreation: A literature review. Water Resources Bulletin, 27(6), 979-989.
[4] Whittaker, D., Shelby, B., Jackson, W., & Beschta, R. (1993). Instream Flows for recreation: A handbook on concepts and research methods. Anchorage, AK: Us National Park Service, Rivers, Trails.

Direct effects may change quickly as flows change, such as safety in running rapids, number of boat groundings, travel times, quality of rapids, and beach and camp access[5]. Indirectly, flow effects wildlife viewing, scenery, fish habitat, and riparian vegetation over the long term as a result of changes in flow regime[6] The draft Plan's use of stream miles as a measure of recreational needs ignores the fundamental determinant of river-based recreational values – Streamflow - and the decades of substantive science characterizing the effects of streamflows on recreational values.

Streamflow is often manipulated through controlled reservoir releases, spills from dams, and diversions. Additional scenarios contemplated by the Plan, such as climate change, drought, and water rights development can all impact flows and recreation quality. In decision-making settings, especially those guided by the Colorado Water Plan, specific evaluative information on how flow affects recreation quality is critical, particularly where social values are often central to decision-making. Enormous work remains to be done to identify and meet Environmental and Recreational (E&R) gaps.

American Whitewater has assisted Basin Roundtables, and the CWCB in the assessment of flow-recreation relationships, and the development of "boatable days" as a quantitative metric for identifying recreational demands.[7] The information sets a baseline that describes the existing quality and quantity of recreational boating opportunities in relation to changes in streamflows, and can be applied to evaluating how future water management actions or risk management strategies may impact or enhance our State's recreational values.
Until each Basin, and the State develop a common set of metrics for evaluating recreational values, and apply these metrics consistently to local stream, basin, and trans-basin planning, the Colorado Water Plan will not reach its full potential. The development and integration of recreational metrics, including "boatable-days" will increase the level of support and cooperation American Whitewater and our affiliate clubs can direct towards new projects.

American Whitewater requests that the CWCB continue to fund evaluations of streamflows and their effect on recreational opportunities, and work with stakeholders including American Whitewater to develop baseline boatable-days to measure recreational needs and gaps.

Critical Actions to Enhance Economic Values	Section	Partners	When	Type
Fund and encourage the evaluation of "boatable days" as a common metric for quantifying the impact or enhancement to recreational whitewater boating opportunities under future projects.	5	CWCB, Dept of Outdoor Recreation Industry, BRTs, interested stakeholders	Near-term	Programmatic

[5] Brown, T.C., Taylor, J.G., & Shelby, B. (1991). Assessing the direct effects of Stream flow on recreation: A literature review. Water Resources Bulletin, 27(6), 979-989.
[6] Jackson, W.L. & Beschta, R.L. (1992) Instream flows for rivers: Maintaining stream form and function as a basis for protecting dependant uses. In M.E. Jones and A. Laenen (editors), Interdisciplinary Approaches in Hydrology and Hydrogeology. St. Paul, MN: American Institute of Hydrology.
[7] Sanderson, J.S., B.P. Bledsoe, N. L. Poff, T. Wilding, W. Miller, and N. Fey (2012). Colorado Basin Roundtable Watershed Flow Evaluation Tool (WFET) Study.

II. Chapter 6. Water Supply Management

Given the significance of Colorado's recreation economy and the vulnerability of riparian and hydrologic systems in Colorado, safeguarding recreational and environmental attributes in basins throughout the state is critical. Table 6.2-4 of the Plan summarizes how each basin plans to meet its E&R gap. In most basins, however, fewer than half of the priority stream reaches have any known protections – and even fewer speak directly to flows for recreation. While a number of BIPs (South Platte, Yampa-White-Green, Colorado, and Gunnison) indicate they plan to do additional planning, which we wholeheartedly endorse and in which we will continue to participate, the BIPs collectively identify relatively few projects that will help meet the goals of the Plan. Many BIPs identify no new E&R projects, show no additional stream miles protected, and most lack a timeline for completing the evaluations needed to determine how to protect their priority reaches. As a stakeholder, American Whitewater applauds the CWCB for recognizing that strategic partnerships will play a critical role in strengthening existing and potential recreation projects and methods.

The body of work outlined in Section 6.6 of the Plan represents an increase in the understanding of Colorado's existing non-consumptive projects and processes, and American Whitewater appreciates that many of the examples listed are stakeholder processes in which we are fully engaged. Among the state's programs listed in Section 6.6, is the Recreational In-Channel Diversion (RICDs) Program. We feel that there are two significant opportunities to improve the RICD program under the Plan; 1) more clear definition of a "reasonable recreation experience" is needed to improve the implementation and alignment of RICDs with other programs and demands, and 2) the requirement under C.R.S 37-92-102 (6.3) of "control structures" by the RICD applicant should be lifted.

Colorado Law limits RICDs to the "minimum stream flow necessary for a reasonable recreation experience", and must be diverted through a control structure. The un-intended consequence of the control structure requirement, is that an RICD applicant is required to build a "whitewater park" if it seeks to protect boating flows along a reach of stream where recreational uses currently exist. Allowing the applicant to protect boating flows for a segment of river using a stream gage, rather than a control structure, would more easily align RICD rights with other water demands and environmental concerns. Additionally, the CWCB should support the appropriation of "optimal" flows for recreation under RICD rights. Optimal Flows are amounts defined by Flow-recreation evaluations that provide the meet the greatest recreational demands for the most users. The minimum flows currently protected under RICD rights have not always maximized the use of water using this definition.

American Whitewater submits the following two Critical Actions for inclusion into Chapter 10 of the Plan:

Critical Actions to Enhance Economic Values	Section	Partners	When	Type
Support legislation that would amend existing statutes to eliminate the requirement of a "control structure" associated with Recreational In-channel water rights.	6.6	CWCB, DWR, General Assembly, interested stakeholders	Near-term	Legislation
Encourage the application of "optimal" flows for recreation associated with Recreational In-Channel Diversion rights, and fund the study of flows and recreational quality to help identify "optimal" flows that provide the greatest protection of recreational uses and needs.	7.1	CWCB, DNR, General Assembly, interested stakeholders	Near-term	Board Policy

The Plan correctly states that significant work must be done to quantify recreational and environmental needs in a framework that can be applied consistently across all basins. While every basin indicated that meeting its environmental and recreational needs is an important aspect of its BIP, the Plan's deferral to "stream miles" as a general metric for measuring Recreational and environmental protections is inadequate, and certainly not a stand alone measurement of filling our non-consumptive gaps. As discussed earlier, the quantity, timing, and duration of flows in each recreational stream segment is the fundamental metric for quantifying recreational needs, and filing gaps in meeting non-consumptive water demands.

Whether any longitudinal reach of stream in Colorado has any recreational needs or protections (ex. ISF or RICDs), the public's legal rights to recreate on those streams in not fully recognized under state law. American Whitewater believes that the Colorado Water Plan and the Executive Order offer a great opportunity to clarify the publics rights to recreate on our streams and rivers, and to align the activities of CWCB with those of Colorado State Parks, Department of Outdoor Recreation Industry, and local tourism offices to protect both sufficient flows and provide safe access to high-value recreational streams.

American Whitewater recommends the CWCB adopt a Board Policy supporting legislation clarifying the public's right to recreate on natural streams in Colorado:

Critical Actions to Enhance Economic Values	Section	Partners	When	Type
Support legislation that would clarify the public's ability to use natural waterways of the State for river-based recreation, and encourage private landowners to permit recreational use on waters that cross private lands.	9	CWCB, DNR, General Assembly, interested stakeholders	Near-term	Legislation

We appreciate the fact the Second Draft of the CWP places a greater focus on Colorado's rivers, with the dedication of $1 million annually in seed money to conduct stream management plans (SMPs) and a good definition of "environmental resiliency." With regard to the latter, we endorse the amended language that the National Audubon Society Western Rivers Action Network provided:

> Resilience of a stream or watershed can be measured as an ecosystem's ability to recover function after a disturbance, whether acute or chronic. The resilience of an ecosystem is a measure of its ability to absorb changes and return to similar levels after disturbance.[8] Resilient river systems depend upon dynamic seasonal flows [9,10,11,12] and

[8] McCluney, Kevin E., N. LeRoy Poff, Margaret A. Palmer, James H. Thorp, Geoffrey C. Poole, Bradley S. Williams, Michael R. Williams, and Jill S. Baron. "Riverine Macrtosystems Ecology: Sensitivity, Resistance, and Resilience of Whole River Basins with Human Alterations. Front Ecol Environ 12.1 (2014): 48-58.

[9] Bunn, Stuart E. and Angela H. Arthington. "Basic Principles and Ecological Consequences of Altered Flow Regimes for Aquatic Biodiversity." Environmental Management 30.4 (2002): 492-507.

[10] Fausch, Kurt D., Christian E. Torgersen, Colden V. Baxter, and Hiram W. Li. "Landscapes to Riverscapes: Bridging the Gap Between Research and Conservation of Stream Fishes." BioScience 52.6 (2002): 483-499.

[11] Baron, Jill S., N. LeRoy Poff, Paul L. Angermeier, Clifford N. Dahm, Peter H. Gleick, Nelson G. Hairston, Jr., Robert B. Jackson, Carol A. Johnston, Brian D. Richter, and Alan D. Steinman. "Sustaining Healthy Freshwater Ecosystems." Issues in Ecology 10 (2003): 1-16.

[12] Naiman, Robert J., Henri Decamps and Michael E. McClain. Riparia: Ecology,

provide complex and connected aquatic and riparian habitats, and support and sustain diverse, and stable populations of native aquatic and riparian species. To determine levels of resiliency, it is necessary to identify the baseline status of these characteristics and to monitor stream ecological functions and watershed processes on an ongoing basis "Human health and well-being are tied to ecosystem [integrity]"[13]To promote environment resiliency, planned P&M should incorporate the potential stressors of drought and climate change, including decreased supply, changes in water temperature, and changes in runoff timing, duration, quantity, and quality.

With regard to stream management plans, we endorse the proposed changes to the description that the Northwest Colorado Council of Governments provided. We anticipate demand for SMP funds will be great and that the fund will need to be increased in future years. It is not acceptable for Colorado to continue to have a substantial knowledge gap regarding E&R needs and solutions, when substantive and robust science exists that both define solutions, and describe study approaches that can identify needs. Stream management plans can help, but the CWCB must also use stakeholder input and expertise to establish baseline conditions, develop templates for assessments, and suggest replicable strategies for protecting stream segments with priority recreational values across the State.

III. Chapter 10: Critical Actions

The Second Draft of Colorado's Water Plan now includes a long list of action items in Chapter 10. While the vast majority are good ideas, we believe Chapter 10 could be greatly improved by the additions we've recommended in this letter, and listed below. In addition, we support efforts by the CWCB to carefully articulate the "highest priority" actions - ones the can focus on Plan implementation – and to engage stakeholders early in that process.

Critical Actions to Enhance Economic Values	Section	Partners	When	Type
Using existing information, as well as the information developed in SWSI 2016 and stream management plans, compile and fund the development of near-term projects and methods to support economically important water-based recreation.	6.6	CWCB, BRTs, interested stakeholders	Near-term	Programmatic
Support legislation that would clarify the public's ability to use natural waterways of the State for river-based recreation, and encourage private landowners to permit recreational use on waters that cross private lands.	9	CWCB, DNR, General Assembly, interested stakeholders	Near-term	Legislation
Require the integration of safe downstream boat / fish passage at diversion structures.	6.6	CWCB, DWR, interested stakeholders	Near-term	Board Policy

Conservation and Management of Streamside Communities. Burlington: Elsevier Academic Press, 2005.

[13] Naiman, Robert J. "Socio-ecological Complexity and the Restoration of River Ecosystems." Inland Waters 3 (2013): 391-410. Pg 404.

Support legislation that would amend existing Recreational In-channel Diversion statute to eliminate the requirement of a "control structure" associated with beneficial use of in-stream flows for recreation.	9.3	CWCB, DWR, General Assembly, interested stakeholders	Near-term	Legislation
Encourage the appropriation of "optimal" flows for recreation associated with Recreational In-Channel Diversion rights, and fund the study of flows and recreational quality to help identify "optimal" flows that provide the greatest protection of recreational uses and needs.	7.1	CWCB, DNR, General Assembly, interested stakeholders	Near-term	Board Policy
Endorse the use of "boatable days" as a common metric for measuring current and future recreational whitewater boating opportunities, and require the analysis of "boatable days" under permitting of future projects, or exchange cases.	9.3	CWCB, DNR, DWR, interested stakeholders	Near-term	Process

Conclusion

Overall, the State of Colorado has done a commendable job in compiling the Plan to help roundtables identify and address necessary nonconsumptive needs and safeguards. We believe that consistency in evaluating flows that support recreation alongside environmental needs will clarify the process and help the State meet its goals for the Plan. As a stakeholder, our comments intend to underscore the importance of implementing evaluations of flows for recreation, while also suggesting language that helps contextualize the economic benefits of flows that sustain our recreation and tourism industry be added to the Final Plan.

It is important the Plan also identify inconsistencies with state law and the Values the Plan seeks to protect and enhance. We ask that careful consideration be given to supporting legislation that clarifies the rights of residents and visitors to enjoy the recreational opportunities our streams and waterways provide, and . Lastly, we strongly support the State's intent to fund Stream Management Plans and believe that this will be a critical and on-going component of achieving the protections we wish to see applied to rivers across Colorado.

Thank you for your consideration.

In cooperation,

Nathan Fey, Director
Colorado River Program
American Whitewater

PUBLIC INPUT ITEM 115

Dear Colorado State Water Plan Leaders:

Thank you for reviewing and incorporating my comments into the Colorado Water Plan. The well-thought choices you make now can serve both the health of our riverine systems, it inhabitants, our recreation industry we depend on and meet the human consumption water needs of Colorado residents while protecting critical infrastructure. Our water was allocated in a different time in a developing state without the recreation industry, with little regard for pollution control, and at the behest of industrial profits. Colorado has grown from there, and its water needs have changed. The allocation intentions need to adapt from a Kentucky Bluegrass pro-development/maximum industrial profit focus where water can cross basins to cover for bad decisions and unbridled expansion to one where we recognize the health and viability of the state must align with our renewable resources that require clean adequate supplies of water left in the channels they were meant for, a human-powered water-based recreation industry that has succeeded under adverse conditions but will thrive in proper balance, and fish & wildlife habitat where drought conditions aren't exacerbated by cross-basin transfers for strip mall & country club viability. The unnatural plumbing that sustains unrealistic farming methods and reckless subdivision expansion can not be allowed to continue and expand. New pipelines, canals, diversions and dams will ultimately be our biggest mistake that can't be rescinded once our charismatic & critical species decline, tourism halts and residents go thirsty. I submit the following comments:

1. As a kid growing up on western rivers, a multi-year river guide on the Arkansas, Salmon and Green, and a career federal river manager, I've learned many lessons as to the value of a healthy stream with vigorous flows. Healthy rivers with recreation and healthy ecosystems bring many jobs, strong community relationships, a renewable tourist-based economy with low unemployment and higher wages, healthy active residents, and municipalities thriving on natural values that increase without unnatural built enhancements that demand water and harm fish & wildlife habitat. In my opinion, recreational water needs are not adequately appreciated and identified in the Plan. Overlooking and under-appreciating recreational flows are a mistake that grossly harms communities; especially those struggling to adapt to this millennium while leaving the mining and archaic farming practices and industries behind. For this plan to work, the state must provide a common framework that unifies the terms, technology, metrics, assessment tools, and

processes required to make this Plan successful regardless of basin and fair regardless where a snowflake falls or melts.

2. Basin Roundtables must have a state-specific set of metrics for development that look toward the future of healthy basins with balanced ecosystems and natural non-impactive renewable industries. Without a unified agreed-to set of metrics that can be drawn upon, with identical definition and meaning that applies to all basins there is much opportunity for very selfish decisions to be made that are not driven by Coloradoan's best interest and future. This is no easy order where eastern basins have tended to rule supreme while the western slope has drained. Without a strong state management focus & effective leadership, this process will have been for naught and will fail along with Colorado's future. The studies and metrics must assess demands for recreation & its dependent features. Rivers have levels where they: are no longer floatable, fishable, have temperatures where dangerous algae growth occurs, e-coli levels where humans are harmed, days where flow and weather are agreeable to floating, etc. A baseline from acceptable to ideal focused and adaptable into the future must be set after completing adequate study of the quantity and quality of flow required to support recreational opportunities and the values for which the river is used and attractive to users (healthy fishery, adequate fishing opportunities, wildlife populations & viewing, water-level dependent scenic opportunities, etc.). There are non-governmental groups that specialize in this type of work, and are generally happy to assist when requested. American Whitewater sets the national standard, and appears clearly involved in your process. Listen to them, use their data, and tap into their proven tools. The organization has brought life, sustainability and successful economies to dying ecosystems and communities of West Virginia coal country.

3. Realize there just isn't enough water to feed development and population expansion infinitum. Colorado allocated a huge amount of water when few people lived in the state. Making due with what really exists in a climate change reality is beyond critical. The state must work with Basin Roundtables to keep water in the river for environmental and recreation needs once human consumption needs are met. The instream needs for the state's future success depend on the state showing true leadership in guiding the Roundtables with goals and outcomes for in-stream needs and identifying goals and outcomes for recreational and environmental needs in Basin Implementation Plans. Failure to plan is a plan for failure for some of Colorado's biggest industries like the

Arkansas River guided whitewater and fishing industry; an over $60 million industry providing jobs for over 4,200 people while transporting over 300,000 tourists down the rapids in 2015 (CROA numbers). Designating Browns Canyon a National Monument will insure additional federal funding for better tourist facilities, greater draw to visit Colorado, and protection from federal highway expansion or other projects that would threaten riverbank continuity. The big question any summer is if there will be floatable flows when the out-of-state visitors arrive.

4. Protect your streams and flows in perpetuity. There is a great fear of the unknown that tends to go along with the uninformed resident that makes him/her afraid of anything perceived that may restrict personal freedoms or access to favorite places. That generally comes with protecting special rivers and streams unfortunately. The thing that few consider is that there are many benefits those ignorant & quick to judgement never grasp. Many protections, like National Wild & Scenic River status for a river, come with ample & ongoing management funding, bring free professional planners to work with the public to set metrics and ascertain the necessary flows for its outstanding features, in no way limit uses in place at the time of designation, do not inhibit the public's use of the resource, and acts as a set of handcuffs to the federal government who is generally the management unit that usually has little ability to deny a devastating water resources project in a critical wildlife habitat with only their 'multiple-use mandate.' There are many protections that bring assistance and funding that would help to fill planning gaps and complete critical projects already known and yet to be identified.

5. Invest in a healthy watershed instead of spending on preparing for your planning failure. Clean water, healthy streams and human-powered recreation are what Colorado advertises itself to be. Sadly, so does Utah! If your plan is for a healthy environment for happy healthy Coloradoans supported by Colorado's most valuable renewable resource, take care of your rivers & streams while keeping their waters clean and in their intended basins, then plan to invest the dollars required to insure it happens. Statistics show that 64% of our nation's clean water flows right off our national forests. National Forests make up over 20% of Colorado's acreage. While municipal water purification plants can cost tens to hundreds of millions of dollars, Colorado has an amazing asset freely flowing out of the Rocky Mountains.

So please:

1. Complete a Colorado-wide all-basin assessment of recreation demands with a recreation-specific set of terms, both descriptive and evaluative.

2. Identify and fill gaps in data while identifying measurable metrics that allow for specific important stream values to be identified and the water flow and quantity to protect those values.

3. Prioritize leaving water in the streambed while not putting it in pipes while destabilizing watershed health.

4. Prioritize what makes Colorado special to live in and visit, and let the water flow that direction.

5. Fund the nonconsumptive uses that renew, re-create and make the state special more than any other place.

6. Insist the Basin Roundtables work together, with the public and with stakeholder groups with expertise and knowledge in creating a future that diverges from Colorado's 'strike it rich while downstream users-be-damned' history.

7. Adjust state and local regulations to encourage, facilitate and bludgeon (only where required) everyone to work cooperatively for our grandchildren's water and lifestyle.

8. Make permitting streamlined for those items that further the greater good of Colorado's environment and water quality and recreation needs that benefit the economy while keeping water in its own channel & basin.

Thank you for your consideration and attention to my input. I appreciate your willingness to provide an outstanding state for residents, visitors while protecting healthy ecosystems and future viability & opportunity for generations to follow.

Sincerely,
David Cernicek
cernicek@cluemail.com
307.699.7701

PUBLIC INPUT ITEM 116

Sep 16, 2015

Governor John Hickenlooper
136 State Capitol
Denver, CO 80203-1792

Dear Governor Hickenlooper,

Thank you for this opportunity to comment on our state water plan. I am encouraged to see many of the priorities Coloradans have overwhelmingly supported--including healthy rivers and a favorable statewide urban conservation goal--incorporated into our water plan.

Below are some overall comments, but my two primary comments on the Colorado Water Plan are the following:
1) Compared to residential and municipal conservation ideas and strategies in the plan, there is relatively little about reforming agricultural irrigation practices, given that the agricultural sector uses, by far, the most water. Of course there is water law and allotments that need to be respected, but the state and our farmers need to be collaborative, realistic and creative about reducing agricultural use while still respecting allotments. For example, farmers who practice water conservation through the use of more efficient irrigation methods, could still have the rest of their allotment "banked" or stored so as not to lose their water "credits".

2) Given that the state itself has limited authority to enforce this plan, there should be more emphasis on and ideas related to plan implementation. For example, HOW will water conservation be encouraged/required, HOW will ATMs be encouraged/supported, HOW will environmental restoration be encouraged/supported?

The manner and pace of growth in Colorado can be strongly influenced by state, county and municipal policies and requirements. These three entities can and must work collaboratively to create common-sense criteria for future water projects and water management. Any state, county or municipal-supported efforts should: (1) protect rivers and their habitats, (2) promote high levels of water conservation and recycling, (3) provide clear information and public input opportunities, (4) have the support of local communities involved, and (5) be cost-effective. The state is in the best position to convene

and facilitate a collaborative process to make this happen.

Lastly, as our population grows, please increase funding and scope for water stewardship education. Much of the public is not aware of the magnitude of our water challenges. We need to change the culture and our relationship with water through comprehensive education. Our often overworked rivers support so much, and yet provide priceless habitat for birds and other wildlife. Every Coloradan must understand the value of water, not just the cost.

Thank you for your efforts in creating our Colorado Water Plan and for the opportunity to comment in this collaborative process. I ask you to bring our water plan to a strong finish as a workable blueprint that will protect our rivers and wildlife and thriving communities. Please continue to support and sharpen these critical priorities with action steps and sustainable funding.

cc: Colorado Water Conservation Board

Sincerely,
Ms. Patricia Billig
Boulder, CO 80305
p.billig@comcast.net

PUBLIC INPUT ITEM 117

In any new water project planning, and likewise in any water reallocation planning, non-consumptive uses must be valued by providing for those types of use in ways which are concrete and quantifiable and are given the heft of priority rights.

Better priority should be given to non-consumptive uses. We must create the likelihood of actual, in-stream water for recreational and environmental purposes. Water we can count on in all years except those which are the most dry.

Development on the Front Range must be not be subsidized or encouraged to continue to tap into ever more West Slope water. As a state actor we must discourage the Front Range from taking the same developmental path places like Los Angeles, Las Vegas, and Phoenix have taken.

Instead, lets try to hold on to the things that make Colorado special. Out water plan should place greater value on a West Slope that is wet, agriculturally viable, environmentally sound, and developmentally attractive. Any actualized state water plan should encourage development where the water is.

As for both the urban Front Range and the agricultural West Slope more emphasis should be placed on more efficient use of water, as opposed to spending more just to move water around. Cash spent on efficient use, instead of moving water great distances, would be money put to much better use. And, the types of development which follows such planning would be less problematic, less clustered in large urban centers, and altogether more sustainable.

The final state plan should more heavily promote efficient uses of "M & I" and agricultural water. More emphasis is needed on this. More regular efforts must be made which result in the provision of more money to subsidize improvements in those areas.

Kevin Cook
Mancos, CO
(970) 560-0561

PUBLIC INPUT ITEM 118

September 16, 2015

James Eklund, Director
Colorado Water Conservation Board
1313 Sherman Street
Denver, CO 80203

Dear Director Eklund:

The **Southwest Farmers and Ranchers Coalition** is a joint chapter of the National Young Farmers Coalition and the Rocky Mountain Farmers Union in Southwest Colorado. The Southwest Farmers and Ranchers Coalition advocates for beginning farmers and ranchers to maintain agricultural heritage and develop a cooperative community of regional producers that promote regenerative management practices improving soil health, conserving water, and protecting the environment of our unique semi-arid region. We appreciate the time and effort that has gone into the Colorado Water Plan, and as a new and growing organization we are excited to become an active partner in the plan and in the new future of Colorado agriculture. We would like to echo the comments submitted by National Young Farmers Coalition regarding Draft 2 of the Colorado Water Plan. We believe the final plan should:

- Reduce barriers to young farmers and ranchers entering a career in agriculture
- Make a clear investment in protecting agricultural lands
- Enhance funding for irrigation efficiency
- Incentivize multiple stewardship values of agricultural water use
- Elevate soil health and water conservation as key solutions
- Integrate land-use and water-use planning & promote rigorous urban conservation
- Circumvent transmountain diversions
- Promote education and outreach between farmers/ranchers and consumers
- Support a diverse agricultural sector

1. **Reduce barriers to young farmers and ranchers entering a career in agriculture:** As the average age of the American farmer approaches 60, young farmers and ranchers are essential to bridging the gap in agricultural production and land and water stewardship. Young farmers have the creativity and commitment to meet the water challenges we face. Yet they face insurmountable hurdles to entering a career in agriculture.

   As a state, we must prioritize reducing the barriers to entering a career in agriculture to allow young people to continue to build a vibrant Colorado agricultural sector. This includes addressing such barriers as land affordability, permanent farmland protection, capital, education and training, student loans, consumer education, land use planning, and prioritizing food security, rural economies, climate resilience, and natural resource stewardship.

2. **Make a clear investment in protecting agricultural lands:** Colorado, its metropolitan areas, eaters and other food chain stakeholders have a keen interest in investing in foodshed viability similar to watershed viability. Urban and supply chain stakeholders have the opportunity to become allies in protecting the states' farm and ranch lands. Innovative financial support, partnerships, and legal tools, such as conservation easements, should be supported and projects implemented to protect agricultural viability and get more young producers on the land. While the current draft identifies these opportunities, the state must take them further.

3. **Enhance funding for irrigation efficiency:** Funding for on-farm irrigation efficiency improvements, in addition to conveyance efficiency improvements, is critical as these technologies allow farmers to do more with less. Individual famers and ranchers should not bear the full cost burden of efficiency improvements particularly where such improvements provide multiple benefits to other users, including the environment.

4. **Incentivize multiple stewardship values of agricultural water use:** Agricultural water use is different from other uses of water. It often meets multiple needs and values beyond those directly intended for food or fiber production. These include wildlife habitat, groundwater recharge, instream flows, and open space values. These multiple uses need to be thoroughly addressed and valued and producers incentivized to manage for them.

5. **Elevate soil health and water conservation as key solutions:** Soil health is essential to water conservation and agricultural productivity. Soil health should remain in the final plan and should be heavily promoted as a critical management tool statewide.

6. **Integrate land-use and water-use planning & promote rigorous urban conservation:** We commend the state for linking land use planning with water use planning. Within this paradigm, we have immense opportunity to further collaborate to protect working farmland that steward water that eventually flows to our cities, grows food, and keeps rural communities thriving. Rigorous goals for urban water conservation should be maintained or exceeded in the final draft.

7. **Transmountain diversions are a last resort:** These threaten the social, economic and ecological foundation on which rural communities are built and in which agriculture thrives and should be considered a last resort to filling any water gap.

8. **Promote education and outreach between farmers/ranchers and eaters:** The CWP executive summary notes a "maturing water conservation ethic across Colorado." The state should continue to recognize that a deep investment in each Colorado resident's understanding of the importance of agriculture, stewardship practices and conservation is a critical asset to achieving our goals as a state and promoting and protecting a vibrant agricultural sector.

9. **Support a diverse agricultural sector:** The final plan should support agriculture of all scales and operation types including small- and mid- scale operations with local and regional markets. These are high-value operations often run by the next generation of producers and should be considered on par with other types of production agriculture.

To achieve the above recommendations, the plan should:

- **In Ch. 6 P. 125:** Add to goals of agriculture: "protect and enhance Colorado's natural resources, and provide ecosystem services."

- **In Ch. 10 Section I.C.3.** Add "and agriculture" to the list of projects potentially supported by a green bond program

- **In Ch. 10 Section III.** Maintain or enhance rigorous urban conservation and reuse actions in final plan

- **In Ch. 10 Section III.c.2.** To "Develop new guidance…" add: "Guidance should include smart growth that plans for farmland protection and viability." Maintain or enhance integration of land use and water planning actions in final plan

- **In Ch. 10 Section IV.a.1.** To: "Establish an education and assistance program…and for new Colorado farmers to own land." Add: **"This may include financial and other support for land links, land trusts, and conservation easements that protect working farmland and make irrigated land affordable for the next generation of farmers and ranchers."** We are heartened to see in Ch. 6 P. 130-131 actionable steps that include promoting conservation easements and reimbursing "agriculture for value added to the environment…."

- **Ch. 10 Section IV.a.2.** Add "and landowner perspective" to "Host a stakeholder group…from a technical and legal perspective."

- **Ch. 10 Section IV.b.1.** We commend the inclusion of this language: "Develop a strategic education program to promote agricultural water conservation **and soil health initiatives."** Many local entities, such as the High Desert Conservation District in the Southwest, are already taking this on and should be supported in expanding these efforts, rather than reinventing the wheel. Add to this section: "Include in the program identifying key partners, such as conservation districts, who could receive financial and technical support through such a program to implement the curricula."

- **Ch. 10 Section IV.b.2.** Add the bold below: "Provide grants, loans, and technical support to refurbish diversions and ditches **and invest in on-farm efficiency,** to generate saved water…"

The Colorado Water Plan is an exciting step towards a sustainable future for the State of Colorado. Thank you for your time and commitment towards this valuable and essential natural resource.

Sincerely,

Dustin Stein, Board President of the Southwest Farmers and Ranchers Coalition

PUBLIC INPUT ITEM 119

COMMENTS ON
COLORADO'S WATER PLAN
First Draft, 12/10/2014

COMMENTS by Sandy White, Arkansas Basin Roundtable

General observations:

- the CWP represents a *lot* of work and probably the expenditure of a *lot* of money. Some of it is very good, excellent. Other portions are not -- in detail and sometimes in concept tending to be sophomoric.
- Of specific general concern are
    - the continual reference to (100+) and blaming of the bogeyman, "climate change," rather than simply recognizing the uncertainties of climate variability and the necessity to account for it in water supply planning.
    - the profoundly ill-founded notion that recreational and environmental uses are "nonconsumptive" (*e.g.* Chapter 5, p. 81).
    - Failure to address the related issue of the water-related management of public lands from which a significant portion (68% NFS) of Colorado's water supply arises.
- The CWP is more a status report than a plan.
- The next version of the CWP should put the appropriate section number(s) (in addition to the page number) on each page in either a header or a footer.

Specific comments, by page:

Page	Comment
v	TOC appears to have some pagination problems, *e.g.* § 9.3 is actually on p 299 rather than 295. Need to check carefully, since it is quite off putting to find an error right off the bat.
x	Listing of Acronyms & Abbreviations is a very good idea, although needless repetition (*e.g.* of BIP and BOR) could be avoided by having but one list for the entire volume.
	Chapter 1: Introduction
2	Text box: What is "smart land use?" I glanced through the report, based on the TOC, and could find no definition. As a county planning commission member, I suppose that it means land use with which I agree.… Or is it planning with which everyone agrees? For the purpose of the CWP is it a strategy, using the LUCIS Model? The term needs to be explained in the CWP.
3	1st ¶, last sentence: "Colorado's Water Plan is the map that will guide decisions and actions in the face of future water needs and demands." Perhaps it would be best to state that this will guide the *Executive Branch's* decisions and actions. At the moment, at least, it will have no effect on the decisions and actions of the legislative and judicial branches.

3 In the bottom margin, left hand side, there appears to be a spurious "16."

Chapter 2: legal and institutional setting

8 Last ¶, 6th + 7th line: "To become an enforceable perfected water right…." I think this is inaccurate. I am aware of several conditional water rights which are exercised and enforced prior to being made absolute; indeed, in order to be made absolute, a conditional right must be exercised in priority. Perhaps this sentence might be revised to: "To avoid the requirement of further diligence applications, a condition right must be exercised in priority and be established as an absolute right by court decree."

9 1st ¶, line 6: Consider inserting "or administrative" between "court" and "approval" thereby including the SWSP process.

9 3rd ¶, first sentence. I believe this is incorrect. The purpose of the depletion assessment is to make sure that future depletions do not exceed historic depletion, not to balance consumptive use with returns as suggested in the first sentence.

10 2nd ¶, 2nd line: Consider changing "a full allocation" to "its entitlement." This would recognize the frequent situation where seniors are only partially in priority, *e.g.* when a senior right for 10 cfs can divert only 6 cfs without impinging on an even more senior right.

10 Next-to-last ¶, 2nd sentence: For clarity, consider changing the sentence to: "Because the prior appropriation doctrine forbids the change of one water right to the injury of another, making such changes is a costly proposition with complex legal and engineering analyses required."

25 Last ¶, 2nd + 3rd line: "cannot be lost through nonuse" is an erroneous statement that I once made in a U.S. Supreme Court argument only to be hammered by Justice Byrom White who said, "You don't know that!" I had made the statement for effect and he was absolutely right. Reserved rights are creations of the judiciary and, while lots of lower courts have opined about the rights' characteristics, only the U.S. Supreme Court could conclusively establish that they "cannot be lost through nonuse." It has not. Consequently, because of the continuing tension between reserved rights and state appropriative rights, please consider removing the phrase "—and cannot be lost through non-use."

Chapter 3: Overview of each basin

34 Under "Basin Challenges" for the Colorado mainstem, consider adding the uncertainty of compact administration. Until water users understand how the State intends to meet compact shortages, *i.e.* who if anyone will be called out, there is simply no way to plan for such contingencies. I know that it is now fashionable to say that such planning is not necessary if we avoid compact shortages. Unfortunately, that is nothing more than whistling in a graveyard.

Chapter 4: Water supply

56 2nd ¶, 1st line: change "report" to "plan."

58-61 There seems to be a lot of waffling in this climate discussion. Anyone long involved in the water business is aware that the annual water supply in Colorado suffers wild annual fluctuations. That is the reason that most municipal water systems are so focused on "firm yield." Table 4-4 is in need of clarification, especially the negative values in the last two columns and the expression "209 climate projections" in footnote "d."

67 In this water quality discussion there appears to be a major omission, indirect reuse whether voluntary or involuntary. Regarding involuntary it might be appropriate to mention the practice and perils of using reusable effluent as substitute supply for fresh water diverted by exchange or in an augmentation plan. While water quality standards must be met so must the water quality needs of substitute supply recipients – often dramatically different. See *Thornton v. Denver*, 44 P.3d 1019 (Colo 2002).

Chapter 5: Water Demands

70 Last ¶ which carries over to the top of p. 71. The first sentence is right on. The following sentences are clumsy and need some work. Consider replacing them with: "Approximately 13.7 million af of water originate in Colorado. Of that, a cumulative 5.3 million af are diverted and consumed by Colorado users, leaving return flows of around 8.4 million af to exit the State.

71 2nd ¶: It is important to point out that environmental and recreational uses are consumptive. Indeed, it is not clear that the water budget summarized on p. 70 accurately reflects that recreational and environmental consumptive use. Millions of acres of public lands (populated by forest and grasslands) are used for recreation and inevitably have demands for evapotranspiration. Open water recreation results in significant evaporative loss. Where are those consumptions reflected and accounted for on pp 70+71?

77 Regarding municipal reuse, see the comment above for p. 67.

81 Next-to-last ¶: Can this be true: "water is not consumed by environmental or recreation uses?" Between vegetation on public lands and surface evaporation from open water, both used for recreational and environmental purposes, the statement is categorically false. Indeed, for other users, the SEO charges stream transportation losses from 0.5% to 1.0% per mile. **THIS NEEDS A TOTAL REWORK!**

82 Figure 5-6: This is entitled as a "nonconsumptive" needs assessment. Instead it should be entitled "environmental and recreational" needs assessment. As described above, there is nothing nonconsumptive about recreational and environmental uses.

Chapter 6: Water supply management

87 1st ¶, last line: "emplyong" probably should be "employing"

100 In meeting M&I gap, the SWSI 2010 did not even attempt quantify the needs of small, rural communities or water providers in the Arkansas.

126 Measuring this water gap in "stream miles" is clumsy at best. More importantly, it obscures the trade-off and relative value of sustaining environmental and recreational values. Those values are in competition for water with traditional consumptive uses; only by using equivalent units for all needs/gaps can thoughtful decisions be made when one is pitted against another.

126 Figure 6.2-3: what is meant by "direct" v. "indirect" protections?

127 It probably is a mistake to include "watershed health" among environmental and recreational goals. At least as the term is being used quite recently in the Arkansas basin, watershed health is includes far more than environmental and recreational concerns.

144 What is "programmatic consistency?" Sounds suspiciously like "one size fits all."

149 Regarding "past legislation," as I recall the first mentioned 2010 legislation does not apply to small communities, less than 2000 af/yr.

171 Ag uses 80-90% of water? How about environment/recreation?

174 There are <u>two</u> types of abandonment: common law (intent), statutory (non-use, abandonment lists, C.R.S. § 37-92-401)

179+ "Actions" ag conservation; most are pretty obscure, *e.g.* #3 "high priority diversions?" Important? Juniors?

190 ATMs, Table 6.4: rotational fallowing, is contrary to SEO's SWSP reqmt of permanent dry-up.

191 What are the "water court procedures" that are an impediment to ATM?

214 3rd ¶:Prior to 1973, contrary to the text, many other entities adjudicated instream flows in their names. (see *Araphoe County v. Collard*, 827 P.2d 546 (Colo 1992). After 1973, however, only the CWCB could make such appropriations. Is that a good thing?

247 2nd ¶: Neglects to mention that, as water passes through the forest, it is consumed. That consumption or cost, should be attributable to the recreational and environmental attributes of that forest. Needless to say, thoughtful forest management (which we don't seem to have now) can reduce unnecessary ET and make additional water available for downstream users. I wonder what analyses, if any, have been made of the differences in water produced by National Forests before and after the Multiple Use Act (1960? 1964?)

250 ARB BIP re watershed health.

252 Actions: Pretty spooky; unaccountable coalitions run amok apparently without regard for cooperating and accountable local governments. "Watershed master plans:" who adopts, funds, enforces? Statutory authority? #10, I'm not sure about "statewide coordination of watershed coalition" – one size fits all? Derogation of local control?

253 Climate change effects: pretty thoughtful, no doomsday predictions, "uncertain."

255 Flood Hazard Mitigation Plan for Colorado; The Colorado Drought Mitigation and Response Plan; Natural Hazard Mitigation Plan???

287 Appropriation doctrine is "ever evolving and will need to adjust appropriately. *** There is room for improving water management within this allocation system." **Such as?**

289 **How** will the State "work collaboratively with local governments with this existing framework and Colorado's Water Plan is a valuable tool for both levels of government in that work?" [this is reminiscent of that famous "polysyllabic piffle")

290 What are "watershed level master plans?" Authorizing legislation in place? Who prepares? $200K each? How cost derived?

290 Having trouble reading Fig 9.2-1. Huerfano County $70-140M?

290+ CWCB to develop list of priority projects from BIPs? ("projects that have the potential to move forward quickly, have cross-basin and statewide benefits, and have a possible funding plan") What is left for RTs to do?

291 "Water users need to be aware of the true costs inherent in providing water." How about the true costs in "buy and dry" (BAD), i.e. the destruction of rural communities?

309 §. 122.2 applies only in the event of an application for a federal permit, see 37-60-122.2(1)(b).

310 WQCD Reg 84 applies only to direct reuse of reclaimed water.

311 HB1041 regs may not be "completely prohibitive?" They certainly may be prohibitive in effect. Casemaker headnote: "If a proposed project fails to satisfy even one criterion contained in the applicable regulations, the permit must be denied. *Colo. Springs v. Eagle County Bd. of County Comm'rs*, 895 P.2d 1105 (Colo. App. 1994)."

PUBLIC INPUT ITEM 120

The Gunnison Basin Roundtable
501 Palmer Street
Delta, CO 81416

September 16, 2015

Colorado Water Conservation Board
Via Email: cowaterplan@state.co.us

Re: July, 2015 Draft 2 – Colorado Water Plan – Comments from Gunnison Basin Roundtable

Dear Chairwoman Hoppe and Members of the Board:

Thank you for the opportunity to comment on the second draft of the Colorado Water Plan. This planning effort has been a worthwhile opportunity to review the existing water assets, available sources, and future water needs of the state as well as the water needs of regional basins and local communities.

The Gunnison Basin Roundtable (GBRT) appreciates the efforts of the staff in drafting this very complex and detailed document. The resulting document provides an excellent and exhaustive discussion of water supplies and demands throughout the state. The technical information related to water rights, operations, legal issues, and priorities from Basin Implementation Plans (BIPs) are well documented and summarized. We believe that these issues, priorities and concerns, as well as basin-specific technical data, have been appropriately described in the Plan.

In the Gunnison Basin BIP, the GBRT has identified the protection of existing water uses as its top priority. After detailed discussions and analysis it has become widely understood and accepted that the majority of the existing water uses are agricultural. Although these agricultural water rights are typically senior in priority, they can be jeopardized by increasing junior water users and associated depletions due to potential Compact calls or other triggers for ensuring practical minimum requirements for Lake Powell and Lake Mead. Although Colorado water law protects senior water rights as against juniors within the state of Colorado, existing uses should be protected from the impacts due to the accumulation of junior depletions as against the Colorado River Compact. This priority should be clearly reinforced in the Colorado Water Plan as it is consistent with, and affirms, both Colorado law and the importance the Roundtable places on protection of existing uses.

When Governor Hickenlooper called for the formulation of a State Water Plan, his stated priority was to preserve the state's vibrant economy, while supporting viable agriculture, robust recreation and a strong environment. As the plan has been developed with input from the Basin Roundtables, the IBCC, the CWCB, the Legislative Interim Water Committee and much public comment, the Staff of the CWCB has struggled to identify methods of maintaining agricultural viability in the face of many diverse comments and demands. Unfortunately, it appears that the only identified mitigation in the plan for potentially transferred agricultural water rights is to

monetarily compensate agricultural producers for lost revenue when water is voluntarily withdrawn from agricultural use. Although the GBRT is not opposed to the idea of a willing seller/buyer relationship for water rights, such an unrestrained 'free-market' does not necessarily provide for the long term viability of agriculture as an industry nor does it provide economic stability for the various communities that can be adversely affected by such water transfers. Without comprehensive management and careful mitigation the agricultural economy of the entire State may be impacted.

Different areas of the State will be impacted differently by voluntary reductions of water use by irrigation water right owners. Such reductions of water use could be the result of ATMs for municipal supplies, water right dedication to water banks for compact protection, leases for demand management programs, deficit irrigation for environmental reasons, or any combination of these or other present and potential agricultural water uses.

In summary, reduction of agricultural water use can have unintended consequences on agricultural communities, related economic drivers and third party impacts. For example, neighboring agricultural producers to those voluntarily participating in these programs could be negatively impacted without recourse (*e.g.,* weed and pest management, dust, declining property values, etc.). Stream flows can also be adversely impacted when historical patterns are changed, even interrupting recreation and tourism patterns. If such changes occur, leading to changes in environmental conditions, present ecology can be impacted (*e.g.,* wetlands, in-channel flows, riparian degradation, etc.). Stream flows and groundwater recharge patterns can also be changed when water is removed from the land, potentially impacting tributary aquifer conditions and harming domestic wells in rural areas. When combined, these potential impacts can significantly change the function of community economics which ultimately puts additional pressure on agriculture and can reduce its viability.

The GBRT understands that there is no feasible way to prevent all these impacts and in no way does the GBRT advocate interfering with individual property rights; however, the Plan should make it clear that changes to irrigation practices can and will affect associated communities. Therefore the GBRT would like to recommend that the State Water Plan identify a process to study the impacts that irrigation changes, such as dry-up, could potentially create. Such a process should identify all potential impacts that a community could experience. It should outline how proponents of a significant water use change should be required to meet with affected community members and attempt to find a middle ground. This should be included in Chapter 10. When complete, the community meetings could result in a revised proposal that has benefitted from contributions of additional stakeholders and from greater community involvement. For example, water transfer proponents may find that their plans are too detrimental to the community and decide to back off, once there has been an opportunity for community members and the proponents to communicate directly. In other instances, that community dialogue may lead to a middle ground that is acceptable to all and that would offer a greater degree of viability for agriculture because a process was in place to require an evaluation of all potential community impacts, good and bad.

Conservation of water is an important aspect of ensuring sufficient water supplies for the future. However, there can be unintended consequences that will result from a "one-size-fits-all" approach. Agricultural conservation needs to be site-specific to ensure that other water users are not injured by a change in time and place of return flows, or lack thereof. Municipal and domestic conservation likewise needs to be tailored to meet the specific situation of each community. Lawn irrigation in the Front Range, as well as the West Slope, needs to be

carefully planned to incorporate "gray" water and other reuse techniques where possible, and the choice of plants and grasses should reflect the arid conditions of Colorado. However, legislative mandates decreeing specific household water-use formulas, or percentage limitations on lawn space, are not likely to be as well-received as community-specific means of conservation. With this in mind, mandates should not be proposed as action items for legislation in the Water Plan.

The GBRT strongly suggests that the Water Plan should encourage solutions involving storage as a tool for better management of water throughout Colorado. Probably every basin and sub-basin would benefit from being able to capture water during wet years and re-time its use for dry years. Related storage solutions may include new techniques in aquifer storage to limit evaporative losses, increasing capacity of existing reservoirs, the construction of new off-channel reservoirs, as well as the implementation of new technology to better match the existing supplies to the existing demands. Those storage locations that have been considered in the past, but not constructed due to permitting challenges, should be reexamined. Particularly in the South Platte and Arkansas Basins, where increasing storage capacity during times of high flows when native water otherwise leaves the state in excess of compact obligations to downstream states (e.g., Nebraska and Kansas) could minimize the need for additional diversions of water from the Colorado Basin.

The Conceptual Framework is a critical part of the Colorado Water Plan. Ongoing efforts should be maintained to address potential downstream triggers and to refine the seven principles in order to reach true consensus.

The Gunnison Roundtable supports a continuing role for the roundtables in the implementation and refining of the basin plan as well as the state water plan. We also believe that continued and increased financial support for projects included in the respective BIPs must be a top priority of the state. The GBRT encourages the continued involvement of the roundtables in the planning and funding process for local projects identified in the BIPs.

Additional comments were prepared by the Gunnison Basin Roundtable in conjunction with the GBIP consultant, Greg Johnson, of Wilson Water Group. These comments are attached for your consideration.

We appreciate the opportunity to provide these comments and hope that they will be of assistance in finalizing the state water plan. Thanks to all who helped create the Water Plan.

Sincerely,

Michelle Pierce,
Chair

Attachment: Colorado Water Plan Review, by Greg Johnson, Wilson Water Group

Memo

To: GBIP Subcommittee
From: Greg Johnson
Date: 8/18/2015
Re: Colorado Water Plan Review

Introduction

As approved at the Gunnison Basin Roundtable meeting on August 3, 2015, Wilson Water Group (WWG) performed a thorough review of the Colorado Water Plan (CWP) based on experience preparing the Gunnison Basin Implementation Plan. The final deadline for public comments on the Colorado Water Plan is September 17, 2015, which leaves the GBIP subcommittee and GBRT roundtable members about one month to determine how, or if, they would like to submit comments to the Colorado Water Conservation Board prior to the CWP being finalized in December 2015.

This review was performed on the second draft of the CWP, dated July 2, 2015. A redlined version of this draft was also used to compare changes with the first draft of the CWP, released in December 2014. Per the GBIP scope of work the review sought to: "ensure that the GBIP goals, issues, and projects are appropriately addressed in the final draft of the Colorado Water Plan."

Process

WWG performed a comprehensive technical review to examine how the GBIP and related issues are incorporated into and addressed by the Colorado Water Plan. The investigation specifically sought and flagged any relevant inconsistencies, misrepresentations, omissions, or errors for review by the GBIP subcommittee and GBRT members. For simplicity, this effort focused on major issues and discrepancies, not minor items such as style, typos, or wordsmithing. The review sought to catch errors or potential issues in the draft CWP document, along with items from the GBIP that may have been omitted, but are worthy of inclusion.

Methodology for the review focused on a dedicated reading of the entire document as well as systematic keyword searches for relevant terms (e.g. Gunnison, GBIP, GBRT, Blue Mesa, agricultural viability, Aspinall, transmountain, etc.). Any identified issues were directly compared to the text of the GBIP.

Summary

While a handful of minor items were identified for consideration, no major issues of concern to the GBRT were identified in the review of the CWP. The plan is a very long and exhaustive summary of water policy and related issues in the state. It generally does a good job of summarizing existing operations, legal issues, and information from the basin implementation

plans without inflaming any key debates. Nonetheless, the most significant chapter of the document, Chapter 10: Critical Action Plan, includes numerous recommendations (many of which are legislative) that could ultimately prove to be of interest to the GBRT when the details are fleshed out at a later date.

The attached summary table identifies 22 items for potential consideration by the GBIP subcommittee and GBRT members. No attempt was made to formulate a potential response.

In addition to the issues identified in the attached table, the CWP includes many constructive items of potential interest to GBRT members, such as:

- A new section on agricultural viability in response to CWP comments and the work of the IBCC subcommittee on agricultural viability (page 232-236)
- GBIP excerpts used as an example on a number of occasions (e.g. definition of three primary types of agricultural shortages)
- A focus on planning efforts related to avoiding a Colorado River Compact deficit, rather than the state's response to a compact curtailment
- Recommendation to provide significant additional state account funds to the Water Supply Reserve Account
- Refined focus on policy, programmatic, and funding items that can be addressed by the CWCB and related state agencies in the near future (Chapters 9 and 10)

Recommendations

The items identified in the attached table do not include a recommend response. WWG recommends that the GBIP subcommittee and GBRT members review this memo along with Chapter 10 of the CWP (Critical Action Plan, 18 pages) and meet (perhaps via conference call) to determine an appropriate course of action.

As noted, there are currently no major red flags in the CWP related to GBIP or GBRT issues, however the evolution of details related to recommendations in the plan could be of concern in the future. As such, it may be appropriate to submit a relatively brief comment letter supporting the efforts of the CWP while noting the need for the roundtable to provide continued critical review of state planning efforts as the CWP evolves.

Review of Colorado Water Plan - Gunnison Basin Roundtable

Prepared: August 18, 2015

CWP Version: July 2, 2015

	Chapter	CWP Page# (full pdf)	Issue Category	CWP Quote/Issue	Notes
1	TOC		Typo		Page numbers in TOC of full pdf version do not match page numbers in individual chapter pdfs and can create confusion.
2	1	1	Tone	"A blind hope that basin economies, watersheds, and ecosystems can withstand more water diversions."	Statement could be interpreted as a value judgement that diversions are inherently bad.
3	6.2	108	Factual Correction	Table 6.2-1: Common Themes Across BIPs	Table 6.2-1 Gunnison needs red checkmark (BIP activity) for "Focus on Agricultural Economy" as it is discussed in the GBIP in a number of places (most notably in text box, page 21).
4	6.2	109	Factual Correction	"Some, like the Arkansas, Colorado, North Platte, Rio Grande, and South Platte/Metro Basin Roundtables, are interested in how agriculture supports nonconsumptive needs."	Since this was one of the GBIP basin goals add "Gunnison" to this sentence
5	6.2	111	Typo	Table 6.2-2: Summary of BIPs Addressing the M&I No-and-Low-Regrets and Gaps	Table 6.2-2 Delete errant "f" in the Gunnison row for the column titled: "Are No/Low Regrets Likely Met?"
6	6.2	125	Potential Discrepancy with GBIP	"The agricultural gap is defined as the difference between what a basin indicates it wants to achieve considering agriculture, as defined in its goals and measurable outcomes, and what projects and methods it has determined could be implemented to meet those needs"	Though the surrounding discussion in the CWP is fairly thorough, this definition is different from the GBIP perspective: "The SWSI 2010 report did not characterize agricultural shortages as gaps. However, the GBRT has determined that agricultural shortages do constitute a legitimate and longstanding water supply gap in the Basin. Therefore, the GBRT defines the agricultural gap in the Basin as the full extent of the shortages identified by the analyses of SWSI 2010 and this plan."
7	6.2	132	Potential Discrepancy with GBIP	"Gunnison [Agricultural] goals and measurable outcomes"	This discussion should also reference GBIP Goal 1: Primary Basin Goal – Protect existing water uses in the Gunnison Basin, since it framed much of the GBIP discussion, especially with regard to meeting agricultural needs
8	6.2	132	Clarification	"Currently, out of the 272,000 irrigated acres in the basin, 50,000 are protected through conservation easements and other heritage protection efforts."	Clarify reference for 50,000 irrigated acres protected through conservation easements. GBIP measureable outcome indicates that 183,000 acres (of unspecified irrigation status) are currently protected based on data obtained from the Gunnison Ranchland Conservation Legacy
9	6.2	144	Clarification	"This reoperation was first tried in 2014, and will continue to be monitored and adapted to the needs of the endangered fish species."	Potentially confusing - clarify language. The GBIP states: "In 2012, the Record of Decision for the Aspinall Unit Operations Final Environmental Impact Statement was implemented. Peak flow targets were first required in 2014 when hydrologic conditions were considered 'moderately wet'."
10	6.3	181	Clarification	Land Use section introduction	The Land Use section needs a better discussion of its ties to agriculture, specifically the IBCC Agricultural Viability Strategy detailed on page 238: "Incentives to reduce urbanization and fragmentation of agricultural lands"
11	6.5	225	Factual Correction	"...45 projects identified on the Tier 1 list which meet municipal, industrial, or agricultural needs…"	Per final GBIP, correct to "...49 projects identified on the Tier 1 list…"
12	6.5	226	Factual Correction	"The roundtable identified a total of 45 Tier 1 projects and methods meeting municipal, industrial, or agricultural needs."	Per final GBIP, correct to "… a total of 49 Tier 1 projects…"

	Chapter	CWP Page# (full pdf)	Issue Category	CWP Quote/Issue	Notes
13	6.6	243	Clarification	Discussion of agricultural benefits to environmental and recreational uses	Discussion is good, but could also include mention of how senior consumptive rights often benefit flows by calling water downstream (similar to discussion in GBIP).
14	7.3	305 (and 397)	Clarification	"Integrated Water Quality and Quantity Management Actions: 1. Evaluate water quality impacts associated with proposed solutions and scenarios presented in the BIPs and in Sections 6.3 through 6.6 of Colorado's Water Plan."	Well-intentioned action item, but may need more detail on expectations for implementation (e.g. will each planned project need a comprehensive water quality review?)
15	8	320	Factual Correction	Table 8-1: Colorado River Development - Discussion in BIPs	Gunnison row for TMD column should include mention of GBIP Statewide Principle 4: "Local solutions must be utilized to meet Colorado's future water needs without a major state water project or related placeholder water right."
16	9.2	334 (400, 410)	Clarification	"The existing process and structure of how the WSRA grant funds are distributed from the basin and statewide accounts should be re-evaluated to encourage multi-benefit and multi-partnering projects, and to promote planning and technical support to smaller communities and water providers."	Will need more detail on forthcoming changes to the WSRA program since the GBRT has a strong interest in the ongoing operation of the program
17	9.2	343	Clarification	"Explore with water providers the possibility of issuing a state tap fee for future taps installed statewide."	Potential new mandates would need more clarification and opportunities for roundtable input.
18	9.5	386	Factual Correction	"To help address the basin's water needs, various concepts and activities are encouraged by 2025, such as educating the next generation and political leaders and research on climate change adaptation and the ten "tier one" projects within the BIP."	Per final GBIP, correct to "49 tier one projects within the BIP."
19	10	393	Clarification	Legislative Concepts	All legislative ideas would likely be of interest to GBRT members and may have potential conflict with GBIP values. As such, they would need much more clarification and stakeholder input.
20	10	396	Clarification	"In order to support the integrated funding plan, identify and determine a path to develop a new viable public source of funding, such as through a container fee ballot initiative"	Potential new fee/tax would need more clarification and opportunities for roundtable input.
21	10	400	Clarification	"Require water providers to conduct comprehensive integrated water resource planning using the water conservation best practices at the high customer participation levels where possible, as defined in SWSI."	Potential new mandates would need more clarification and opportunities for roundtable input.
22	10	400	Clarification	"Support legislation that would require retailers to only sell irrigation technologies that meet WaterSense specifications by providing technical details on the potential savings and hosting a stakeholder process."	Potential new mandates would need more clarification and opportunities for roundtable input.

PUBLIC INPUT ITEM 121

Thank you for this opportunity to comment on the Second Draft of the Colorado State Water Plan. Many of the changes from the First Draft are cause for celebration. Despite this, there is also still cause for concern. I shall start with the celebration.

It is wonderful that the Second Draft includes steps to improve efficiency: a 100% statewide goal for water rates that increase as more water is used, and plans to discourage attempts to recreate water-demanding eastern landscapes in our water-scarce state; acknowledgement that water laws and administration are out of touch with Colorado's changing needs and recognition of the need for education about the value of water. Hopefully this education would include the needs of the environment for water, as well as the needs of humans, and include both the need for and methods of reducing water use at home, in businesses, industry and agriculture.

Despite these improvements, many aspects of the Second Draft are concerning.

One of the historic failures of Colorado's water law is its complete focus on human water needs at the expense of the water needs of our environment. In the 1800s the people developing water laws wanted to ensure that water was available for mining, ranching, farming, cooking and cleaning; and they were concerned with protecting the water rights of the first person to use a particular water source. None seemed to understand that native plants and animals, which they both enjoyed and ate, would disappear without adequate water or that the land likely would become desert if humans deprived the environment of water. The settlers also did not seem aware of the environmental services provided by wetlands, such as purifying polluted water.

Today river experts understand the absolute need of rivers for flushing flows that emulate the spring runoff of melting mountain snow. As we saw in the Grand Canyon when dams cut off such flows, riverine environments degrade rapidly when deprived of them. Although these flows are needed for some recreational human needs, there is considerable danger of supplying them only where recreational uses occur. All sections of each river need such flows to remain or become healthy, to support the wildlife and to regenerate the plants that depend on them. Minimum stream flows are helpful during some seasons. They are necessary for but inadequate on their own to maintain river health. Recent removal of some large and some very small dams in the

northwestern and northeastern US have returned more normal river flows to some rivers and streams previously deprived of them, with significant recovery within those streams and rivers of some economically important fish populations and other aquatic creatures. Building and removing dams is very expensive, however, and to be avoided. In Colorado, as Second Draft mentions, the further removal of water from rivers would significantly impact a number of fish species, particularly those that require cold and/or deep flowing water. It would also threaten many birds, other wildlife and plants.

The statement of The Goal of the State Water Plan in the Second Draft is unfortunately similar to the historic goals of our water laws:

"The goals of the water plan are to defend Colorado's compact entitlements, improve the regulatory processes, and explore financial incentives all while honoring Colorado's water values and ensuring that the state's most valuable resource is protected and available for generations to come."

This does not even specify supplying the environment with necessary water. One might assume that thought is inherent in the phrase, "while honoring Colorado's water values..." but later in the Second Draft, the Plan mentions being guided by changing societal values. Without specific mention of the importance of healthy rivers and adequate mimicking of spring flows, our chance to protect river health could be lost to a group of managers who perhaps even temporarily see only the consumptive needs and wants of some humans. The Goal statement and other parts of the State Water Plan need to be expanded specifically to make protection and maintenance of river health by supplying adequate flushing flows a priority. Further, the Plan needs to specify how this will be done and allot adequate money to quantify the need and see that the flushing flows happen. The currently allotted money seems grossly inadequate. This should be as strongly stated as the repetitive mention of protecting current water rights. Public comments recorded on the State Water Plan website make it clear that river health is very important to Colorado citizens.

It is hard to ignore the implications of the dramatic recent Gold King Mine spill that was ironically triggered by an attempt to stop the mine's ongoing leakage of toxic chemicals into the Animas River. For years, mines all over Colorado have been leaking such toxic waste into our watersheds. The Denver Post today (9/16/2015) reported that the

amount of pollutants released during the Gold King Mine spill is released into our watersheds by mines throughout Colorado every two days. Ski areas' use of this polluted river water to generate artificial snow has further increased the content of toxic chemicals in a number of our rivers. The Post reported that many river sections will not support insect life or fish because of this pollution. Clearly, water quality is an issue in Colorado that needs to be dealt with aggressively.

Furthermore, the mine problems highlighted by the recent spill bring up other water quality questions. What problems are we creating that will become more apparent in perhaps100 years or even 1000 years because of hydraulic fracturing? "Fracking" is theoretically safe at least for now, given adherence to theoretical ideals in every detail of the process and the management of resulting waste water. It is clear, however, that such incidents as someone's using cheaper materials than needed or changes in the condition of the fracking structures over time are likely to change that level of safety.

How will future generations view our management of processes that impact their water? Let us not poison the water that will belong to our grandchildren or their grandchildren. And let us not poison ourselves and those downstream from us. We must control mining practices, agricultural overuse of fertilizers and pesticides, inadequate treatment of urban residential and industrial water, etc. Such considerations belong in the Final State Water Plan.

Most water projects are both large and expensive. They have costs built in that are not obvious, such as environmental degradation. The availability of federal financing and other "help," make it even less obvious what the true cost is. We must see that projects are cost efficient and cost effective, and that the public is aware of all costs and has an adequate chance for input before decisions are made. Too often, projects are planned and decisions made without true transparency for local communities and citizens throughout the State. The pressure for faster approval of projects risks that opportunties for public analysis and input will become inadequate. Knowledgeable acceptance of water projects by local communities should be assured before projects are implemented.

The financial costs of water, beyond that for each person's most basic human needs—drinking, cooking, cleanliness—should be borne by water

users through increasing fees for increased non-basic consumption. These charges may include taxes, fees and prices for water based on the amount used. Money for water should not be raised by taxes, fees or charges unrelated to water use. This is an important part of educating individuals, businesses, and other users about the true value of water and the cost of projects that make it available. Any other way of financing water availability decreases everyone's awareness of the value of water and counters the water education promised. Currently, no one pays the true cost of water.

Increased use of water diversions seems inevitable, given how the Second Draft is written, despite its acknowledgement that increased efficiency could do much to close the expected water gap. Yet, there are many kinds of efficiency that could be required yet are not expected requirements. One of these is the timing of watering/irrigation. Denver Water requires there be no watering between 10 a.m. and 6 p.m. during warm months. Travel to the eastern plains of Colorado and to North Park during the irrigation season reveals both large scale irrigation equipment and lawn sprinklers active during the most intense heat of the day, even when the temperature is around 100°F on the plains and above 90°F in North Park. Regulations and education must stop such wasteful practices. Some conservation organizations have suggested that diversions could be totally avoided by careful attention to efficiency. This is not nearly as sexy as big water projects, but it may well be the way to make water availability cost efficient.

The Second Draft mentions some water storage in our aquifers. Given the evaporation rates from reservoirs (as much as 8% or possibly more annually with longer warm seasons) and the plans for future long term water storage to ensure against deficits during periods of drought, evaporation-free storage may indeed be the way to ensure the availability of water when it is needed. It's cost is said to be large, but so are the costs of dams and diversions.

Thank you again for this opportunity to comment. I believe that the Second Draft is a great improvement over the First, but does not yet fully reflect what is needed in Colorado: even stronger steps toward efficiency through even higher levels of water conservation, recycling and greater use of evaporation-free storage; protection of water quality; protection of rivers and their habitats through flushing spring flows and minimum stream flows; careful education about the value of water for all life; and cost efficient water management. Finally, all

water projects should have the support of the communities in the area where a project will occur and downstream from that project.

Nancy Stocker
2885 S Gilpin St
Denver, CO 80210

PUBLIC INPUT ITEM 122

WILLIAMS, TURNER & HOLMES, P.C.

ATTORNEYS AT LAW

Mark A. Hermundstad*
Susan M. Corle
Kirsten M. Kurath*
Phillip J. Jones **
Jeffrey L. Driscoll
Tyler J. Dixon

Of Counsel
Douglas V. Johnson
Henry M. Dusenbury***

All Attorneys Admitted in Colorado
*Also Admitted in Utah
**Also Admitted in Florida
***Also Admitted in North Dakota

Anthony W. Williams (1926-2007)
Warren L. Turner (1926-2003)
Berndt C. Holmes *Retired*

GRAND JUNCTION OFFICE
Courthouse Place Building
200 N. 6th St. - P.O. Box 338
Grand Junction, Colorado 81502-0338
Phone: 970-242-6262
Fax: 970-241-3026
www.wth-law.com

September 17, 2015

Mark A. Hermundstad
Shareholder
mherm@wth-law.com
(970) 242-6262, ext. 235

Colorado Water Conservation Board
1313 Sherman St., Room 718
Denver, CO 80203

Re: Comments on Colorado's Water Plan

Dear CWCB:

My comments on the Draft Conceptual Framework for transmountain diversions, set forth in Chapter 8 of the second draft of Colorado's Water Plan, are set forth below. I am Mesa County's representative on the Colorado Basin Roundtable (CBRT) and had submitted these comments to the CBRT for review. However, the CBRT did not have time to review and synthesize the various comments received from its members, and the chairman of the CBRT, Jim Pokrandt, encouraged me to submit these comments directly to you.

Although I am Mesa County's representative on the CBRT, I have not had an opportunity to discuss these comments with the Mesa County Commissioners, so I cannot verify that they represent the views of Mesa County. However, I am also counsel for Ute Water Conservancy District, Grand Valley Water Users Association and Orchard Mesa Irrigation District, all of which have had the opportunity to review these comments. The managers of these three entities have all have informed me that they concur with my comments set forth below.

My comments on the Draft Conceptual Framework are as follows:

1. The preamble to the Framework states that "The Framework provides a way to think about how entities in Colorado might develop a future increment of Colorado River System water. The Framework states the realities and issues proponents for a new TMD should expect to address."

Comment: The Framework sets forth the minimum "realities and issues" that a TMD proponent will need to address. Each TMD will be different and will have different impacts on affected West Slope interests. The various impacts that a TMD will have cannot be determined until the TMD is proposed and its details are known. The Framework sets forth important principles that must be addressed for any TMD, but there will be other issues that will need to be addressed in connection with any specific TMD that is proposed. The Framework should recognize this reality.

2. Principle 1 of the Framework states that "a new TMD would be administered under Colorado's priority system, diverting water only when it is physically and legally available in priority in the basin of origin . . ."

Comment: One of the reasons the East Slope desires to maintain the ability to develop new TMD's is to preserve East Slope agriculture. However, a new TMD may very well result in transferring the pressure for agriculture water conversions from the East Slope to the West Slope. The quoted language above from Principle 1 highlights the problem: in order to ensure that water is "physically and legally available" to supply a new TMD, the proponent of the TMD would be encouraged to look to senior West Slope agricultural rights to firm up the project. Nothing in the Framework expressly addresses this issue.

One way to address this issue from a broad West Slope perspective is to have the Framework state that the new TMD will not rely on West Slope agricultural rights to obtain a water supply that is "physically and legally available" to supply the TMD. I understand that the West Slope raised this issue but that the East Slope rejected it, with the argument being that it does not want to limit its options when a new TMD is proposed. However, the Framework is supposed to contain principles that are supported by both the East and West Slopes. If this is an issue on which the East and West Slopes disagreed, then the Framework does not really provide a complete, mutually acceptable framework for addressing the TMD issue.

Although from a broad policy perspective a ban on using West Slope agricultural rights to firm up a TMD may be an attractive option, there are other factors at play that may argue against that option. One factor is that water rights are private property rights, and farmers and ranchers have the right to sell them to whomever they want. Our goal is to maintain agriculture as a viable industry, and we should pursue ways to accomplish that goal, but the owners of agricultural rights also need to maintain the flexibility to sell their water rights if they need or desire to sell them. So, an absolute ban on using agricultural rights to support a TMD may be at odds with the private property rights of the owners of those water rights. Instead of pursuing a ban on using West Slope agricultural rights to support a TMD, perhaps a middle ground should be explored that contains the following aspects (which are derived in part from the Family Farm Alliance's report of July 24, 2015, entitled: Colorado River Basin Water Management, Principles and Recommendations;" bulleted items in quotes below are quotes from that report):

A. A new TMD should be encouraged to look for water supplies from sources other than West Slope agriculture to the maximum extent practicable (similar in principle to the CBRT position that a TMD should be the last tool out of the toolbox).

- "Proposals to develop actual 'new' water through constructed storage, reuse, recycling, desalination and modernized conveyance facilities to meet these demands,

rather than moving agricultural water to other uses, must be part of all water shortage planning efforts."

B. If West Slope agricultural water rights are used to help firm up the water supply for a new TMD, all of the impacts of converting the water from agricultural use to TMD use must be identified, minimized and fully mitigated.

- "True costs of transferring water away from irrigated farms through land fallowing must be accurately accounted for and compensated or mitigated, including unintended consequences and third-party impacts."

- "Environmental damage to rural riparian areas, open spaces and regional ecosystems as a result of fallowing productive agricultural land must be a consideration in new water transfer or sale proposals."

- "Unintended consequences associated with reducing productive agricultural land should be accounted for and avoided, and, if unavoidable, minimized and fully mitigated."

- "If water is transferred from irrigated agriculture, the unintended consequences associated with lost agricultural lands should be factored and fully mitigated to avoid any negative impacts to rural communities, the environment, and local economies."

C. The decision to rely on West Slope agricultural rights must be a mutual one, based on the agreement of the TMD promoter, the governmental and other water entities in the West Slope area that will be losing irrigated agricultural lands, and the owners of the affected agricultural water rights. This will allow the parties to address the issues raised in a. and b. above as part of the agreement. Compensatory storage will need to be a part of the agreement and mitigation package.

3. Principle 2 of the Framework states that "[a] new TMD would be used conjunctively with East Slope supplies," but it also states that "East Slope backup water supplies" must be in place to provide water in times of shortage.

Comment: The wording of this principle appears to establish a hierarchy, with the TMD being the primary water source and East Slope supplies being a "backup" for that primary source. From a West Slope point of view, this is backwards. The East Slope supplies should be the primary source for the project with the West Slope supplies being the "backup" source of water. At the very least, the East Slope supplies should be on equal footing with the West Slope supplies, with all of them working together "conjunctively" to supply the project.

4. Principle 6 states that "Colorado will continue its commitment to improve conservation and reuse." (Emphasis added).

Comment: By using the word "will," this principle is phrased in mandatory terms. However, the actions set forth in the M&I conservation and Reuse sections of the principle are set forth as non-mandatory goals (for example, "a new TMD should have active conservation plans . . ."). The actions discussed in these sections should be stated in mandatory terms (for example, "a new TMD shall have active conservation plans . . .").

Thank you for the opportunity to provide these comments.

Very truly yours,

WILLIAMS, TURNER & HOLMES, P.C.

Mark A. Hermundstad

Mark A. Hermundstad

PUBLIC INPUT ITEM 125

MICHAEL G. ROSENBERG
ATTORNEY AT LAW

17665 Hwy 82
Carbondale, CO 81623-9516
970-259-7501
866-844-2424 – Fax
email mgr@lobo.net

MICHAEL G. ROSENBERG
ATTORNEY AT LAW
Licensed in Colorado &
New Mexico, United States
Supreme Court, Tenth Circuit
Court of Appeals, United States
Claims Court

September 17, 2015

Colorado Water Board
1313 Sherman St.
Room 721
Denver, CO 80203

RE: Comment on 2nd Draft of Colorado Water Plan

Dear People:

Sustained population growth will inevitably wipe out and negate conservation and efficiency gains trigging water shortages. If population growth is unchecked and accepted as inevitable and not considered as the underlying/foundational cause of the water crisis (too much demand for a limited resource) then we will not only betray our own generation but future generations. Negative population growth does not equate with abortion but rather education, family planning and limits on immigration.

Consider: At what population level can the United States sustain itself?

Enclosed for your inspection and review find a copy of "Dying of Thirst: Population Growth, Climate Change Aggravate Water Shortages".

Michael G. Rosenberg

NPG Negative Population Growth, Inc.

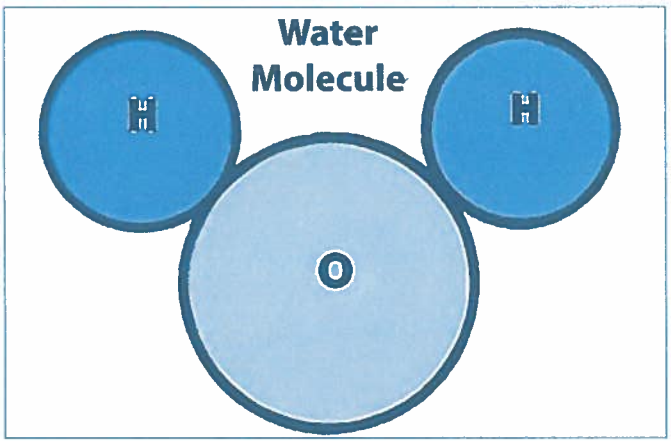
DYING OF THIRST: POPULATION GROWTH, CLIMATE CHANGE AGGRAVATE WATER SHORTAGES

An NPG Forum Paper
by Leon Kolankiewicz

Water – Much More Than Just the "Universal Solvent"

Chemists refer to water – H_20 or H-O-H – as the "universal solvent," because it is capable of dissolving a wide range of different substances. In fact, more substances or chemical compounds can dissolve in water than in any other liquid.

Water's unique chemical composition and physical properties are what make it such an excellent solvent. Each water molecule possesses a "polar" configuration of one oxygen and two hydrogen atoms – one side (hydrogen) has a positive electrical charge while the other side (oxygen) has a negative charge. This permits the water molecule to become "attracted" to many other different types of molecules. Water can be so strongly attracted to a compound like salt (sodium chloride or NaCl), that it can override the attractive forces that bind together the sodium and chloride ions in a salt molecule and thus dissolve it (USGS 2015).



The magic molecule

But to biologists and ecologists, water is more – much, much more – than the universal solvent. It is the stuff of life. Water is both integral and indispensable to all life on Earth (and perhaps the universe): human and non-human, plant and animal, vertebrate and invertebrate, microscopic and macroscopic, prokaryotic and eukaryotic, multi-cellular and unicellular, terrestrial and aquatic alike. Water occurs both inside and outside of the cellular membranes and biochemical walls that demarcate the boundary between biotic (living) and abiotic (non-living) matter. Up to 90 percent or more of the weight of healthy, living plant and animal tissue is water. The human body overall consists of more than 60 percent water, while our blood is 92 percent water and our brain and muscles are 75 percent water. Even bones are about 22 percent water (WIP 2015).

To focus for a moment on a single organ – the kidney – it and water's properties as a solvent partner to keep us humans and all other vertebrates alive and healthy. Kidneys filter out substances that enter our bodies with the foods and drinks we ingest. The kidneys then have to expel these substances from our bodies after they accumulate them. Hence the role of water: as such an effective solvent, water flushing through the kidneys dissolves these substances and helps our bodies eliminate them.

Both economies and ecosystems wither without water. Where water in the liquid state is not present or plentiful, as in Antarctica or the world's driest deserts, life itself is also not present or plentiful. Water is an especially important feature in most of America's national wildlife refuges, for example. Many species of wildlife that abound there occur *only* because water and the wetland habitats that derive from water are present.

Drowning in Water and Dying of Thirst at the Same Time

Fortunately for *Homo sapiens* and all other organisms, the Earth is blessed with an unfathomably enormous volume of water: 332,500,000 cubic miles (mi^3) to be exact (USGS 2014a). That's equal to 250 million cubic yards for each of the 7.3 billion inhabitants of the planet, or about 70,000 Olympic-sized swimming pools. This volume of water has remained essentially unchanged for billions of years, even as it circulates and recirculates over and over again through the timeless loop known as the hydrologic cycle. All that fluctuates over vast reaches of geologic time are the relative proportions of water that are liquid and saline (in the oceans), liquid and fresh (surface water in rivers and lakes, and groundwater beneath continents and islands), fresh and frozen (in Antarctica, Greenland, and the world's glaciers), frozen and saline (sea ice in the Arctic Ocean, Bering Sea, and others), and gaseous (as water vapor) in the atmosphere.

Indeed, there is so much water that famed oceanographer and documentary filmmaker Jacques Cousteau used to call Earth the "Ocean Planet." The sea covers 71 percent of the Earth's surface. With such a staggering abundance of this primordial liquid, it seems paradoxical that humanity could ever run short of "the wet stuff." Yet both acute and chronic water shortages are ever more pronounced – and destined to become even more

Nesting pair of trumpeter swans (*Cygnus buccinator*) in marsh habitat at Agassiz National Wildlife Refuge in Minnesota. Waterfowl such as swans, geese, ducks and wading birds such as herons and egrets exhibit what ecologists call "obligate dependence" on water and wetland habitats.

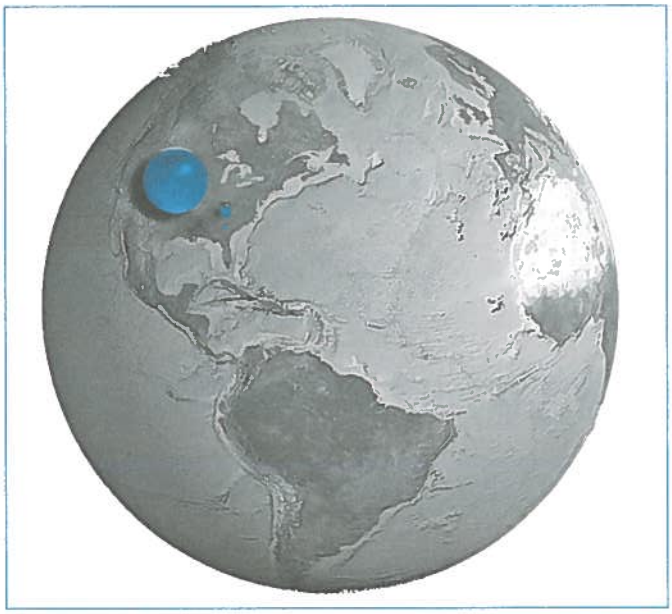
severe as this century progresses. Water is not unlimited. There simply isn't enough to meet the demands, whims, and needs of 7.3 billion thirsty human beings making ever greater claims on this limited liquid.

Part of this seeming paradox – vast abundance versus scarcity – is resolved by looking at the image of the globe with the smallish bubbles of water suspended above it. To begin with, only three percent of the Earth's water is fresh, while 97 percent is saline, that is, in the oceans. While saltwater can be converted to potable freshwater, or desalinated, through reverse osmosis and other desalinization technologies, these are costly economically, energetically, and environmentally, and thus, barring a technical breakthrough, are unlikely to be practicable or sustainable on a large scale or over the long term.

Then, of the three percent of the water on Earth that is fresh, nearly 70 percent is frozen as ice in Antarctica, Greenland and thousands of glaciers. The above-right graphic illustrates the surprising lack of water on our planet. If you were to drill a hole through the Earth from pole to pole, the diameter would be approximately 7,900 miles. The image of the globe without seas – our planet's mass of solid land – simply dwarfs the three distinct "bubbles" representing our world's various water resources. The largest fluid sphere, 860 miles in diameter, includes all of the water on Earth: the oceans, ice caps, lakes, rivers, aquifers (groundwater), atmospheric water, and even every living organism. The smaller sphere hovering above Kentucky represents the world's entire volume of freshwater, and it has a diameter of just 170 miles.

The tiny, barely-visible dot poised just above Atlanta, Georgia stands for all of the world's freshwater located in lakes and rivers. (Most of the water people and other living things use on a daily basis comes from these surface water sources.) The volume of this sphere is about 22,339 mi3 – just 35 miles in diameter (USGS 2014a).

Thirty percent of the Earth's freshwater is groundwater, while only 0.3 percent – a mere one-third of one percent, is surface water in rivers and streams, swamps, and lakes. Nearly 90 percent of the world's surface fresh water is in lakes, while only two percent is in rivers at any given time.



Planetary perspective – maybe not so superabundant after all? All of Earth's water combined and freshwater alone shown as a big sphere and a smaller sphere, respectively, and compared with the sphere of the Earth
Image: Jack Cook, Woods Hole Oceanographic Institution

The table shows how all water on Earth is distributed among the various stocks or sources.

Water source	Water volume in cubic miles	Percent of fresh water	Percent of total water
Oceans, seas, and bays	321,000,000	--	96.54
Ice caps, glaciers, and permanent snow	5,773,000	68.7	1.74
Groundwater	5,614,000	--	1.69
Fresh	2,526,000	30.1	0.76
Saline	3,088,000	--	0.93
Soil moisture	3,959	0.05	0.001
Ground ice and permafrost	71,970	0.86	0.022
Lakes	42,320	--	0.013
Fresh	21,830	0.26	0.007
Saline	20,490	--	0.006
Atmosphere	3,095	0.04	0.001
Swamp water	2,752	0.03	0.0008
Rivers	509	0.006	0.0002
Biological water (within organisms)	269	0.003	0.0001

Source: Shiklomanov (1993)

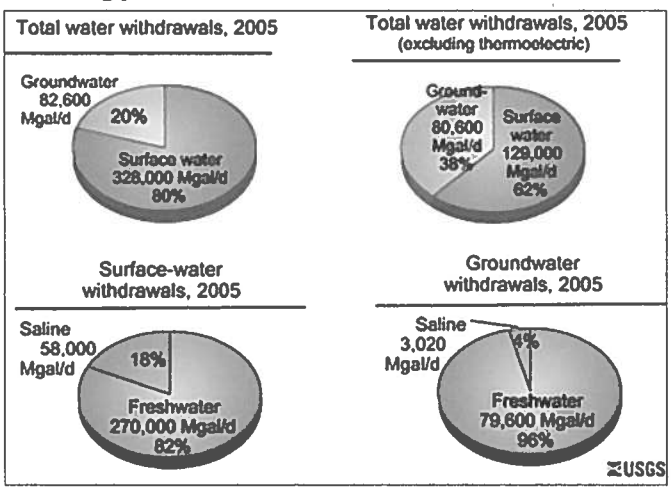
About 3,100 cubic miles of water, mostly in the form of water vapor, is dispersed in the atmosphere at any one time. If it all fell at once as rain, the Earth would be covered with only about one inch of water. The 48 contiguous United States receive a total volume of about four cubic miles of precipitation each day. Each day, globally, 280 cubic miles of water evaporate or transpire into the atmosphere (USGS 2014a).

The worldwide distribution of water resources is extremely uneven. While the global hydrologic cycle provides enough freshwater in aggregate to meet minimum human requirements, the great bulk of this total water in circulation is concentrated in particular regions, leaving other regions with water shortages or deficits (Pimentel et al. 2010) . By 1993, water demands already exceeded supply in nearly 80 nations worldwide (Gleick 1993)

A U.S. Water Primer

Except for the American Southwest, the United States is comparatively well endowed with water resources and uses prodigious quantities of both surface water (withdrawn from man-built reservoirs, natural lakes and rivers) and groundwater (pumped from subterranean aquifers) to supply agriculture, industry, and municipalities.

In 2005, about 410,000 million gallons of water every day (see figure) – more than a thousand gallons per person – was withdrawn for use in the United States – over four million swimming pools' worth or about 5,000 Rose Bowls filled to the



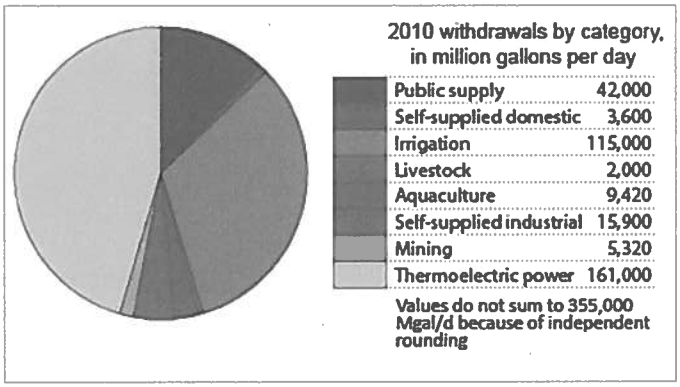
rim. About 80 percent of our water supply is from surface water and the remaining 20 percent from groundwater (Barber 2009; USGS 2014a).

We use water to irrigate our crops, manufacture all manner of products ranging from steel to silicon chips to soft drinks, to water our lawns, fill our cooking pots, wash away our wastes, and even to cool our thermal (nuclear and coal) power plants. About 80 percent of water used in the U.S. is for agriculture (Pimentel et al. 2004), which is very water-intensive because crops (like all healthy plants) need it for photosynthesis and transpiration. All plants demand huge amounts of water during the growing season; much of this water is transpired, that is, evaporated back to the atmosphere through pores in leaves called stomata.

Since 1950, the U.S. Geological Survey (USGS) has estimated water use in the United States in total and state-by-state every five years. Estimates are provided both for groundwater and surface-water sources, for fresh and saline water quality, as well as by sector or category of use (USGS 2014b).

The USGS estimated total freshwater and saline-water withdrawals for 2010 at 355,000 million gallons per day (Mgal/d), or 397,000 thousand acre-feet per year (acre-ft/yr). This was 13 percent *less* than in 2005. Freshwater withdrawals comprised 86 percent of the total, while saline-water withdrawals made up the remaining 14 percent. Most saline-water withdrawals were of seawater and brackish coastal water for use in thermoelectric (coal and nuclear) power plants (Maupin et al. 2014; USGS 2014b).

Withdrawals for thermoelectric power and irrigation remained the two largest uses of water in 2010, and totals for both were less than in 2005: 20 percent less for thermoelectric power and nine percent less for irrigation. Similarly, other uses showed reductions compared to 2005, specifically public supply (–5%),



self-supplied domestic (–3%), self-supplied industrial (–12%), and livestock (–7%). Only mining (39%) and aquaculture (7%) reported larger withdrawals in 2010 compared to 2005 (Maupin et al. 2014).

Aggregate water use (withdrawals) in the U.S. actually decreased 13 percent from 2005 to 2010. During this same period, the U.S. population also increased by about 10 million inhabitants or three percent. This demonstrates that the relationship between population size and aggregate water consumption is not a simple one. Every added increment of population does not necessarily guarantee an added increment of water consumption:

1 additional unit of population ≠
1 additional unit of water use

In all likelihood, the decrease in aggregate water withdrawals between 2005 and 2010 was due mostly to the economic slowdown associated with the Great Recession of 2008.

In addition to population size, economic structure and level of activity, water conservation, reuse and efficiency measures all have a bearing in determining total water consumption. To a point, for a period of time, under special conditions, and with strong public commitment and political support, total water use can be reduced – or at least held constant – even with a growing U.S. population, as it has been in recent years. However, the

crux of the matter is that under these special circumstances, if the U.S. population were smaller (and non-growing, therefore sustainable), aggregate water use could be cut even more. We must simply commit to both population reduction and water conservation, reuse, and efficiency, allowing still more water to remain where nature intended it – in streams, rivers, and lakes.

In-Stream Water Flows Provide Crucial Benefits to Ecosystems and Society

In these natural settings, water performs valuable ecosystem services and functions. These functions not only include supporting aquatic biota (vertebrates and invertebrates, plants and animals), fisheries and wildlife (such as waterfowl and other water-dependent animals), but also commercial navigation, hydroelectric generation, recreation (e.g., boating, fishing, swimming), and even sight-seeing and tourism.

A prominent example of the latter is Niagara Falls. The Niagara River drains all of the Great Lakes (Superior, Michigan, Huron, and Erie), except for Lake Ontario, into which it flows. The water that courses down the Niagara River and over its mighty waterfall is part of the huge St. Lawrence River Basin or watershed, one of the largest in North America. Since 1961, up to 375,000 gallons of water every second have been diverted from the Niagara River upstream of the falls into gigantic conduits or penstocks (NYPA no date). The water flows downward by gravity and spins turbines and generators that convert its mechanical energy into clean, low-cost, renewable electric energy (hydroelectric power).

Niagara Falls from the New York side

Hydroelectric plant on the Niagara River

The Niagara generating station is the largest electricity producer in the entire State of New York, with a capacity of 2,400 megawatts – enough power to light 24 million 100-watt incandescent light bulbs simultaneously – or 96 million 25-watt compact fluorescent light bulbs. If hydro developers had received permission to divert the entire Niagara River into the hydroelectric plant, there would be none left to flow over the escarpment that constitutes Niagara Falls, and a spectacular wonder of nature and crucial tourism resource would be wiped out. What would be visible instead is a dry cliff or escarpment 167 feet high, surely not nearly as impressive as one of the world's great waterfalls, pouring and pounding thunderously as it has for thousands of years.

Fortunately, Americans and Canadians were wiser than this (the U.S.-Canadian border cuts Niagara Falls roughly in half). To balance the potential for power generation with the imperative of preserving the beauty of Niagara Falls, the U.S. and Canadian governments signed a treaty in 1950 that limits the amount of water that can be diverted for hydroelectricity production. On average, more than 200,000 cubic feet per second (cfs), or 1.5 million gallons of water a second, pours from Lake Erie into the Niagara River. The 1950 treaty requires that at least half that amount of water – 100,000 cfs – spill over the Falls during the daylight hours in the tourist season, April through October. This flow may be cut in half (to 50,000 cfs) at night during the April-October tourism period and during the rest of the year with low tourist visitation (NYPA no date).

Tourists on the New York side of Niagara Falls

U.S. Water Withdrawals by Sector

The three largest sectors of water withdrawal and use in the United States are thermoelectric, irrigation, and municipal supply.

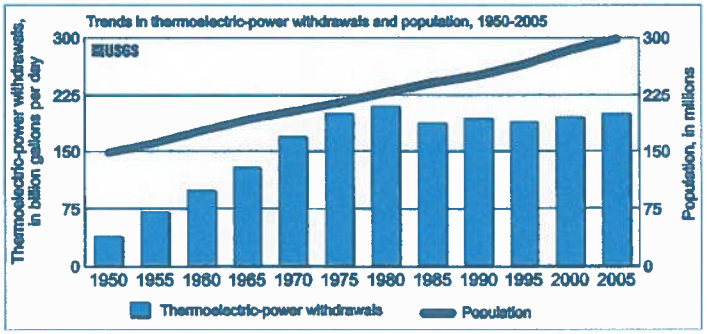
Thermoelectric Power

Generation of electricity is one of the largest uses of water in the United States and worldwide (USGS 2014c). Water for thermoelectric power is used to generate electricity with steam-driven turbine generators. In 2010, about 161,000 Mgal/d were used nationwide to produce electricity (excluding hydroelectric power). Surface water was the source of more than 99 percent of total thermoelectric-power withdrawals. In coastal areas, the

use of saline water instead of freshwater expands the overall available water supply. Thermoelectric-power use accounted for almost half of total water withdrawals in the U.S., 41 percent of total freshwater withdrawals for all categories, and 53 percent of fresh surface-water withdrawals (USGS 2014c).

One of the main uses of water in the power industry is to cool the power-producing equipment. Water used for this purpose does cool the equipment, but at the same time, as dictated by the laws of thermodynamics, the hot equipment transfers heat to the cooling water. Excessively hot water cannot be released back immediately into the aquatic environment, because of the harm it would cause, so the water itself must first be cooled. The most common way of doing this is to build and operate very large cooling towers and to spray the water inside the towers. Evaporation then occurs and in the process, water left behind in a liquid state is itself cooled. The essential need for water is why large generating stations are often located near rivers, lakes, and the ocean (USGS 2014c).

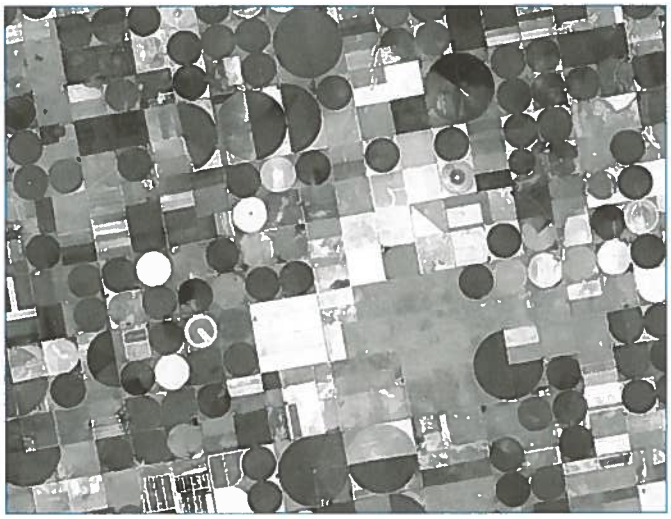
Withdrawals by thermoelectric-power plants increased from 40,000 Mgal/d during 1950 to 210,000 Mgal/d during 1980 (see graph). Withdrawals for thermoelectric power decreased and then have stabilized since 1980, despite the fact that total U.S. population has continued to increase; the total withdrawal of 201,000 Mgal/d for 2005 is slightly above that of 2000. In 2010, however, as noted above, thermoelectric-power withdrawals fell again, by 20 percent, to 161,000 Mgal/d.



What accounts for thermoelectric-power withdrawals having become "decoupled" from U.S. population growth in the last three decades? It is not that thermoelectric power production hasn't increased, for it has. Rather, technological and cultural innovation has occurred. Since the 1970s, an increasing number of generating stations were built with or converted to recirculating cooling systems or dry cooling systems, which use less cooling water than power plants with once-through cooling systems. Also, withdrawals at power plants have decreased in some states because of the implementation of new rules designed to minimize adverse effects to aquatic life at power plant intakes. A decline in the use of coal and a corresponding increase in use of natural gas (as a result of a sharp drop in natural gas prices from new supplies made available by hydro-fracking of shale gas), as well as new power plants coming online that use more water-efficient cooling technology also have helped to lessen withdrawals for thermoelectric power (Maupin et al. 2014).

Irrigation

Irrigation water is essential for growing fruits, vegetables, and grains to feed the world's population. This has been true for thousands of years. The USGS estimates that almost 60 percent of all the world's freshwater withdrawals go towards irrigation uses. Irrigation represents an even larger share – 70 percent – of the world's "consumptive water use," that is, those uses that withdraw water from reservoirs, lakes, rivers or aquifers but do not return it in some fashion to these water bodies. That is because the water is incorporated into the crops themselves or is transpired back to the atmosphere as the crops photosynthesize and grow. Large-scale farming could not provide food for the world's large and growing population without the irrigation of crop fields by water taken from rivers, lakes, reservoirs, and wells. Without irrigation on a vast scale, high-value crops could never be grown in the deserts of California or Arizona or even the Western plains (USGS 2014d).

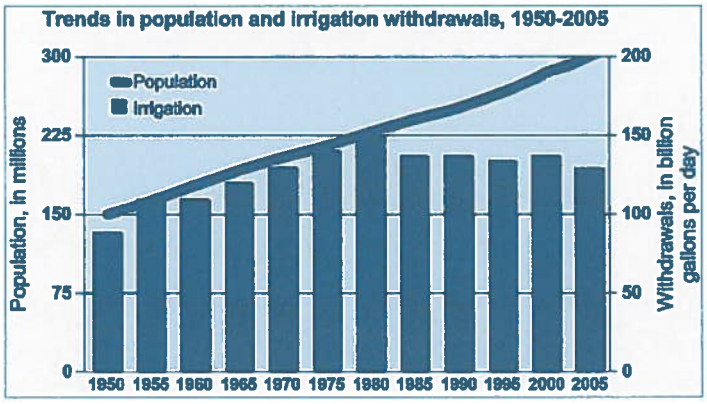


Irrigated crop circles in Finney County, Kansas
Sources: NASA, USGS
Note: Many passengers in cross-country flights may have noticed circles like these plastered across the landscape far below. They are center-pivot irrigation crop circles. In center-pivot irrigation systems, water is pumped from a well in the center of the circle from an underground aquifer and distributed through a giant, long sprinkler that pivots around a central point. In the past, large spray guns were used to spray water through the air onto the crops, but now more efficient low-pressure sprinklers hang from the pipes to aim water closer to the ground, a much more efficient method that saves water. This NASA satellite photo shows large crop circles that are between 0.5 mile and one mile in diameter. This particular area utilizes irrigation water from the Ogallala aquifer, which underlies an area stretching from Wyoming in the north to Texas in the south (USGS 2014d). The Ogallala is a "fossil" aquifer, one which contains ancient water that is not being recharged; thus it is being "mined" and it is a non-renewable resource. In general, when people use water at home, or when an industry uses water, about 90 percent of it used is eventually returned to the environment ("return flows") where it replenishes water sources. That is, water returns to a stream or lake, or it infiltrates down into the ground and returns to groundwater, and it can be used for other purposes, although it often requires treatment or cleaning first at a water or wastewater treatment plant. However, of the water used

for irrigation, only about one-half is reusable. The rest is lost by evaporation into the air, evapotranspiration from plants, or is lost in transit, through a leaky pipe, for example (USGS 2014d).

In the U.S., irrigation withdrawals constitute about 37 percent of total freshwater withdrawals and 62 percent of total freshwater withdrawals for all categories, if thermoelectric power withdrawals are excluded. Surface water accounted for 58 percent of the total irrigation withdrawals. Sixty-seven percent of all groundwater withdrawals went to irrigation. About 61.1 million acres were irrigated in the U.S. in 2005. About 26.6 million acres were irrigated with surface (flood) systems, 4.05 million acres with microirrigation systems, and 30.5 million acres with sprinkler systems. The national annual average application rate was 2.35 acre-feet per acre (USGS 2014d).

The majority of irrigation withdrawals (85 percent) and irrigated acreage (74 percent) were in the 17 conterminous Western states. These are situated in areas west of the 100th Meridian, where average precipitation is typically less than 20 inches annually and is inadequate to sustain cultivated crops without supplemental water. Surface water was the primary source of irrigation water in the arid West and Rocky Mountain States. California, Idaho, Colorado, and Montana combined accounted for 49 percent of the total irrigation withdrawals and 64 percent of surface-water irrigation withdrawals. Nearly 90 percent of the groundwater used for irrigation was withdrawn in 13 states, and each of these states withdrew more than 1,000 Mgal/d (1,120 thousand acre-feet per year) of groundwater for irrigation in 2005. Among these 13 states, groundwater was the primary source for irrigation in Nebraska, Arkansas, Texas, Kansas, Mississippi, and Missouri (USGS 2014d).



From 1950 to 1980, irrigation withdrawals increased by more than 68 percent (from 89,000 to 150,000 Mgal/d). Withdrawals have decreased since 1980 and have stabilized at between 134,000 and 137,000 Mgal/d between 1985 and 2000 (see bar chart). They were 128,000 in 2005 and 115,000 in 2010. Depending on the geographic area of the United States, this overall decrease, in spite of an increasing U.S. population, can be attributed to climate, crop type, improvements in irrigation efficiency, and higher energy costs (USGS 2014d).

Public Supply (Municipal)

Public water-supply systems, also called county and city water departments, or municipal water districts, are vitally important to all urban, suburban and small town residents. These are government, quasi-government, or privately-run agencies with facilities that withdraw water from rivers, lakes, reservoirs, and wells and then treat and deliver it to America's homes, businesses, schools, and governments. At present, the lion's share of the U.S. population (about 86 percent) of the United States obtains its water from public-supply systems (USGS 2014e). In the past, when the American population was largely rural, most families used to have to dig their own wells and create storage tanks for their private, domestic water supply; water quality from those wells was not generally monitored or even known, and was sometimes substandard. Now the public water supply systems have taken over this role.

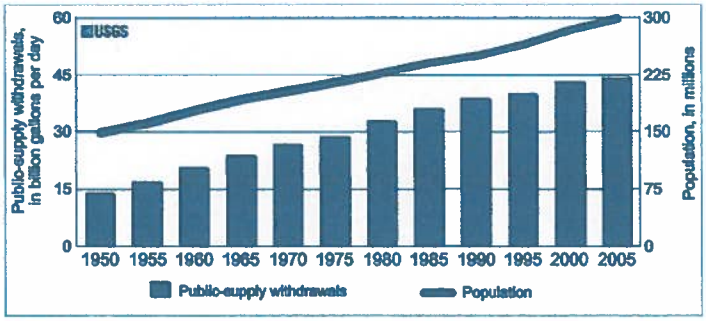
Lake Lanier, north of Atlanta, Georgia
Note: Lake Lanier was created by the impoundment of water behind Buford Dam on the Chattahoochee River in 1956; it is also supplied by the waters of the Chestatee River. It is the main water supply for millions of people downstream.

Portion of a municipal water treatment plant in Texas

An estimated 258 million people rely on public water supplies for their household use. States with the largest populations (California, Texas, New York, and Florida) withdraw the largest amounts of water for public supply. Two-thirds of water withdrawn for public supply in 2010 was from surface sources, such as lakes and streams; the other third was from groundwater. A total of 38 states rely on surface water for more than half their public supplies. Only 15 states obtain more than half their public water supplies from groundwater. California, Texas, New York, Illinois, and Pennsylvania each withdrew more than 1,000 Mgal/d of surface water for public supply in 2005, and 45 percent of the total surface-water withdrawals for public

supply occurred in these five populous states. Three states – Florida, California, and Texas – each withdrew more than 1,000 Mgal/d of groundwater for public supply in 2005 and together accounted for 32 percent of total groundwater withdrawals for this sector (USGS 2014e).

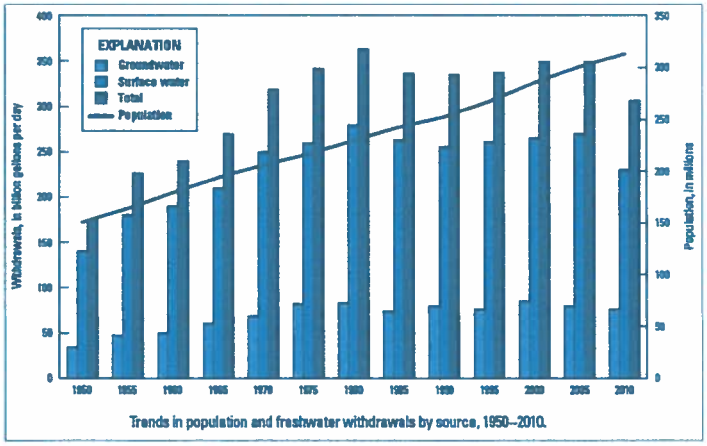
Estimated water withdrawals for public supply have increased continually since 1950 along with the population served by public suppliers of water (see bar chart). Public-supply withdrawals more than tripled during this half-century period; they also increased by about two percent from 2000 to 2005. The percentage of the U.S. population served by public water suppliers increased from 62 percent for 1950 to 86 percent for 2005. Public-supply withdrawals represented about eight percent of total withdrawals for 1950 and about 11 percent for 2005. The percentage of groundwater use for public supply increased from 26 percent for 1950 to 40 percent for 1985 and was about 33 percent in 2005 (USGS 2014e).



Growth of U.S. population and public-supply water withdrawals, 1950-2005

Water Use Trends in the United States, 1950-2010

The bar chart below shows the amount of water used for various categories of water use in the U.S. for the 60-year period from 1950 to 2010. This chart shows the trends in surface water, groundwater, and total-water withdrawals for the United States during this period. Against a background of steady growth during the first half of the period and relative stability in the second half, the relative amounts of surface- and groundwater withdrawals (in percentages) have remained fairly constant. About three-quarters of the water used in America is from surface water (USGS 2014f).



Long-term population and freshwater withdrawal trends by source

What is extraordinary about this graph is that it reveals that America's water use peaked 35 years ago in 1980 and has been relatively constant since then. Many of the pressures forcing greater water use have only increased since 1980, such as population (which grew by more than 80 million from 1980 to 2010), the need to grow more food (irrigation), more industry, more power plants, and so forth, yet in spite of these total water use has not risen. What this shows clearly is that water conservation and reuse efforts and greater efficiency in using water have made a big difference in the last 35 years (USGS 2014f). However, as mentioned previously, to see a greater drop in overall water use, we must also reduce U.S. population in conjunction with these conservation efforts.

Water and Ecosystem Services

Most of this paper has focused on water supplies withdrawn from nature and put to some beneficial use by human beings. However, freshwater of course also plays an integral role in aquatic ecosystems: watercourses (streams and rivers), waterbodies (ponds and lakes), wetlands (marshes, swamps, bogs, etc.), springs, and estuaries (semi-enclosed brackish water bodies that are transition zones between land and sea, where fresh and saltwater mix). Aquatic ecosystems perform many important ecological functions and services. They recycle nutrients, purify water, attenuate floods, recharge groundwater and provide habitats for wildlife (Loeb and Spacie 1994).

Indeed, these ecosystems and the thousands of plant and animal species that live within them and depend upon them – what ecologists call "communities" – would not exist at all were it not for the availability of water. When water is appropriated or taken from these ecosystems for use by human beings, there may be less or no water left behind to perform critical ecosystem services and functions. The integrity of these aquatic ecosystems is often adversely affected or even fundamentally altered.

Example of a small estuary. The nation's two largest estuaries are Chesapeake Bay on the East (Atlantic) Coast and Puget Sound on the West (Pacific) Coast.

Aquatic ecosystems may also be modified and often damaged by human activity other than direct removal of water. This can occur from:

- flood control facilities (e.g., levees, channelization, dams)
- an increase in the amount of developed areas and impervious surfaces within a watershed, which increases the volume and rate of runoff and discharge during storm events
- land use practices within a watershed (e.g., crop cultivation, grazing, logging, deforestation) that cause

erosion and lead to sedimentation within waterbodies
- non-point sources of pollution within a watershed, such as discarded engine oil, fertilizers and nutrients like phosphorus and nitrogen, and even pet feces
- construction within floodplains that impedes the flow of water
- navigation facilities within rivers, such as locks and dams on the Mississippi and Ohio rivers and many others
- dredging of rivers and bays to maintain navigation channels
- ports constructed and maintained in rivers, lakes, and bays
- construction of dams/reservoirs for hydroelectricity, recreation, flood control, water supply, and irrigation.

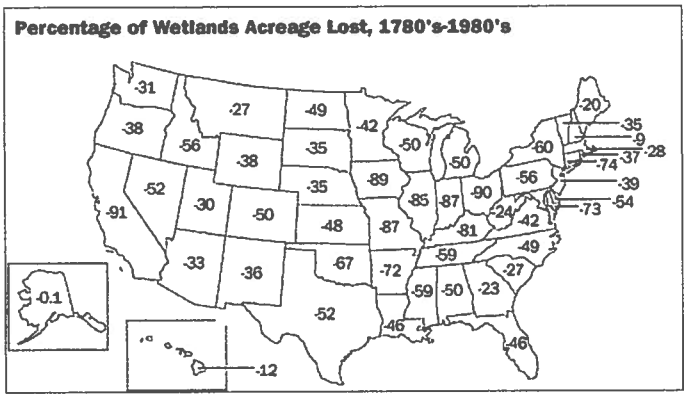
As a result of the above activities, plus water pollution and water withdrawals, more than 123 species of freshwater fauna have been driven extinct in North America since the year 1900. Hundreds of additional species of fishes, mollusks, crayfishes, and amphibians are considered imperiled today. Of North American freshwater species, nearly half of all mussel species, 23 percent of gastropods, 33 percent of crayfishes, 26 percent of amphibians, and 21 percent of fishes are listed as either endangered or threatened because of anthropogenic (manmade) influences.

The pink mucket pearlymussel (*Lampsilis orbiculata*) in the Midwest and East is endangered because dams and reservoirs have flooded most of its riverine habitat (mud and sand and in shallow riffles and shoals). Erosion caused by strip mining, logging and farming adds silt to many rivers, which can clog the mussel's feeding siphons and even bury it completely (USFWS 20).

Recent extinction trends are due largely to extensive habitat deterioration from sedimentation and loading with organic compounds and nutrients, toxic contaminants, stream fragmentation and flow regulation by dams, channelization and dredging projects, and increasing numbers of invasive (introduced, non-native) species. Of 3.2 million miles of stream habitat in the U.S., less than two percent (< 62,000 miles) is of sufficiently pristine quality to be federally protected and only 40 rivers are still free-flowing after more than a century of intensive growth and development (Ricciardi and Rasmussen 1999).

In the 1600s, over 220 million acres of wetlands are believed to have existed in the contiguous (Lower 48) states (Dahl 1990). Since that time, extensive, widespread losses have occurred, and more than half of the original wetland acreage has been drained, dredged, or filled and converted to other uses. Some 22 states have lost more than 50 percent of their original wetlands, and seven states – California, Iowa, Indiana, Illinois, Kentucky, Missouri, and Ohio – have lost more than 80 percent. Both Ohio and California have lost 90 percent or more. The years from the mid-1950s to the mid-1970s saw massive wetland destruction, but since then the rate of loss has diminished substantially (EPA 2013).

Since the 1970s, the largest losses of wetlands have been in Louisiana, Mississippi, Arkansas, Florida, South Carolina, and North Carolina (Mitsch and Gosselink 1993). For the last couple of decades, national policy has been that there should be "no net loss" of wetlands, which has slowed but not stopped wetlands loss. The net wetland loss nationwide was estimated to be 62,300 acres between 2004 and 2009 (DOI 2011).



Total cumulative wetland losses by state, 1780s to 1980s
Sources: EPA (2013), Mitsch and Gosselink (1993)

The health of an aquatic ecosystem can be degraded when the ecosystem's ability to tolerate, absorb, or assimilate a stress has been exceeded. A stress on an aquatic ecosystem results from physical, chemical or biological modifications of the environment. Physical modifications include changes in water temperature, water flow patterns, bank and substrate structure, and light availability. Chemical modifications include changes in the loading rates of nutrients such as nitrogen and phosphorus, oxygen-consuming materials (measured by Biochemical Oxygen Demand or BOD), and toxic substances. Biological modifications include overharvesting of commercial species and the introduction of invasive, exotic species. Human populations can readily impose excessive stresses on aquatic ecosystems (Loeb and Spacie 1994).

There are many examples of excessive stresses with adverse impacts or negative consequences. The Great Lakes of North America have been subject to multiple stresses, such as water pollution, overharvesting and invasive species (Vallentyne 1974). Puget Sound, Chesapeake Bay, and North Carolina's Pamlico Sound are all estuaries under pressure from multiple human stressors, including chemical pollution, eutrophication from excessive nutrients, and overharvest of fish and shellfish. Lakes Pontchartrain and Maurepas next to New Orleans along the Lower Mississippi and Gulf of Mexico illustrate the negative

effects of different stresses including levee construction, logging of swamps, invasive species and salt water intrusion (Keddy et al. 2007).

The mighty Mississippi River, including all of the major tributaries in its huge basin, such as the Missouri, Platte, Ohio, Illinois, Allegheny, Monongahela, Tennessee, and Cumberland rivers, have all suffered from some combination of serious water quality degradation, excessive water withdrawals, alteration of flow regimes to provide for navigation, and exotic species invasions. These have sharply compromised the integrity of aquatic biota in and along these rivers.

California's San Joaquin and Sacramento rivers are overdrafted and overtaxed. The Columbia River system in the Pacific Northwest has been overregulated by 60 dams, devastating its once famous salmon runs, especially those of the king or Chinook salmon. Flows in the Colorado River and Rio Grande in the Southwest have been highly altered and ecosystems in and alongside these rivers have been changed and impaired permanently. The integrity of the famous "river of grass" at the southern tip of Florida, the Everglades, has been badly compromised by invasive species but especially by diversions of water to support agriculture and population growth in Miami, Fort Lauderdale, and the rest of the Southern Florida megalopolis.

Every summer, a massive, hypoxic (low dissolved oxygen [DO], less than 2 parts per million of DO) or anoxic (no DO) "dead zone" develops at the mouth of the Mississippi River in the Gulf of Mexico as a result of all the nutrients carried downstream by the river due to fertilizer runoff from the tens of thousands of farms in the Mississippi drainage basin. The dead zone can expand to 7,000 square miles in area. The zone occurs between the inner and mid-continental shelf in the northern Gulf of Mexico, beginning at the Mississippi River delta and extending westward to the upper Texas coast.

The dead zone is caused by nutrient enrichment or eutrophication from the Mississippi basin, particularly by nitrogen and phosphorous fertilizers. Watersheds within the Mississippi River Basin drain much of the central U.S., from Montana in the west to Pennsylvania in the east and extending southward along the Mississippi River itself. Most of the nitrogen loading originates in major farming states in the Mississippi River Valley.

Dissolved nitrogen and phosphorous flow into the river through upstream runoff of fertilizers, soil erosion, animal wastes, and sewage. In a natural, pristine system, these nutrients are not significant factors in algae growth because they are not found in artificially high concentrations and they are largely used in the soil by upland plants. However, with anthropogenically increased nitrogen and phosphorus input from fertilization to boost crop yields, aquatic algae growth is no longer constrained. Thus, algal blooms appear, the food pyramid is altered, and DO in the area is depleted. The size of the dead zone at the mouth of the Mississippi River fluctuates seasonally and it is exacerbated by modern farming practices. It is also affected by weather events such as Mississippi River floods and Gulf of Mexico hurricanes (Bruckner 2012).

The Outlook for Water under a Changed Climate Regime: Not a Pretty Picture

The U.S. National Climate Assessment of the U.S. Global Change Research Program was initiated at the request of the U.S. government and released to the public in 2014 (Melillo et al. 2014). It was prepared by a team of more than 300 experts guided by a 60-member National Climate Assessment and Development Advisory Committee – the largest and most diverse group ever assembled to produce a U.S. climate assessment. The 2014 Assessment draws on a large body of peer-reviewed scientific publications, technical reports, and other publicly available sources.

With regard to water resources, the 2014 National Climate Assessment found that: "Water quality and water supply reliability are jeopardized by climate change in a variety of ways that affect ecosystems and livelihoods." Climate change is predicted to have the following effects on the water cycle:

- Increases in annual precipitation and river-flow in the Midwest and the Northeast regions.
- Increases in very heavy precipitation events (damaging downpours) and flooding in all regions of the country.
- Increases in the length of dry spells in most areas, especially the southern and northwestern portions of the contiguous U.S.
- Intensified short-term (seasonal or shorter) droughts in most U.S. regions.
- Intensified longer-term droughts in large areas of the Southwest, southern Great Plains, and Southeast.
- Intensified flooding in many U.S. regions, even in areas where total precipitation is projected to decline.
- Changes in water demand, groundwater withdrawals, and aquifer recharge, reducing groundwater availability in some areas.
- Compromised sustainability of coastal freshwater aquifers and wetlands due to sea level rise, storms and storm surges, and changes in surface and groundwater use patterns.
- Decreased river and lake water quality, including increases in sediment, nitrogen, and other pollutant loads from increasing air and water temperatures, more intense precipitation and runoff, and intensifying droughts (Melillo et al. 2014).

The 2014 Climate Assessment predicted that climate change will have large impacts on water use and management. It will affect water demand and the ways water is utilized within and across regions and economic sectors. The Southwest, Southeast, and Great Plains are especially liable to changes in water supply and demand. Changes in precipitation and runoff, combined with changes in water consumption and withdrawal, have already reduced surface and groundwater supplies in many areas. These trends are expected to continue, increasing the likelihood of water shortages for many uses. At the same time, an increasing risk of flooding will threaten human safety and health, property, infrastructure, economies, and ecology in many water basins across the United States (Melillo et al. 2014).

As the century progresses, ***all of these ill effects will be greatly exacerbated by the much larger future U.S. population projected by demographers as a result of continuing mass immigration into the United States.***

The two fastest-growing regions in the country – the Southwest and the Southeast – are expected to be hit, in effect, with a double whammy: many more people exerting greater demands on a constrained, diminished water resource.

The 2014 Climate Assessment states this about the Southwest:

> *The Southwest is the hottest and driest region in the U.S., where the availability of water has defined its landscapes, history of human settlement, and modern economy. Climate changes pose challenges for an already parched region that is expected to get hotter and, in its southern half, significantly drier.*
>
> *Increased heat and changes to rain and snowpack will send ripple effects throughout the region, affecting 56 million people – a population expected to increase to 94 million by 2050 – and its critical agriculture sector. Severe and sustained drought will stress water sources, already over-utilized in many areas, forcing increasing competition among farmers, energy producers, urban dwellers, and ecosystems for the region's most precious resource (Melillo et al. 2014).*

"Heat, drought, and competition for water supplies will increase in the Southwest with continued climate change." – 2014 U.S. National Climate Assessment

The Southeast is also anticipated to run into severe problems for similar reasons. The Climate Assessment notes: "Decreased water availability, exacerbated by population growth and land-use change, will continue to increase competition for water and affect the region's economy and unique ecosystems." Furthermore, the natural and built environments and the economy of the Southeast will be threatened by sea level rise, which is already causing problems in places like the Tidewater region of Virginia (Norfolk, Virginia Beach, etc.) and South Florida (Miami, Miami Beach, Fort Lauderdale, West Palm Beach, etc.).

The Great Plains, while not projected to undergo massive, destabilizing population growth like the Southwest and the Southeast, is nonetheless projected to see increasing water scarcity as a result of higher temperatures. In parts of the region, there will be increasing competition for water among municipalities, farmers, energy producers, and in-flow requirements (ecological needs for surface flows in watercourses).

The trend toward drier days and higher temperatures across the Southern Plains will increase evaporation and evapotranspiration, decrease water supplies, and increase air conditioning demands, placing a greater load on electrical generation, transmission, and distribution systems. These changes will in turn intensify stresses on limited water resources and impinge on political and managerial decisions related to irrigation, municipal use, and energy generation. Increased drought frequency and intensity can transform marginal lands into deserts (Melillo et al. 2014).

There may well be less water available for irrigated agriculture even as there are more people dependent on the crops that irrigation produces.

In sum, as the century progresses, there will be increasing water shortages in several key regions of the country considerably exacerbated by: 1) global warming and, 2) immigration-driven population growth. The first factor is virtually a *fait accompli*, given the climate change locked into place by inertia in the climate system and greenhouse gas emissions that have already occurred. The second factor is not at all a given, unless Americans meekly acquiesce to the high, unsustainable immigration rates pushed relentlessly by vested interests and feckless politicians.

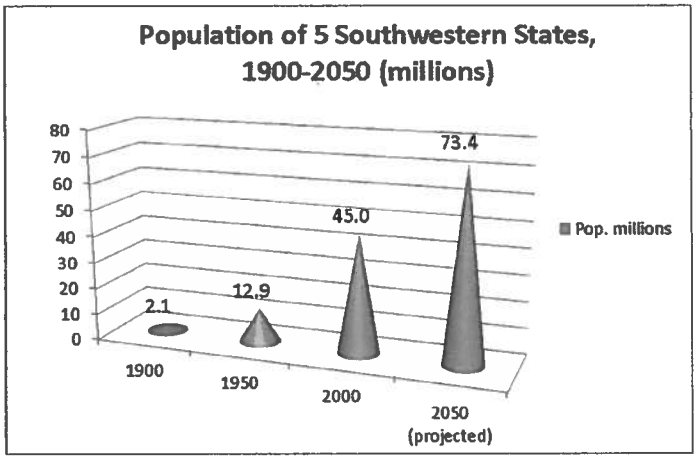
A Texas Parks and Wildlife ranger walks across a dry and cracked lakebed during the drought of 2011. This lake once covered more than 5,400 acres (8.5 square miles).

Conclusion: Population Growth and Climate Change Will Intensify Water Scarcity

Readers may be familiar with the IPAT equation, first introduced in a 1971 paper in the journal *Science* by biologist Paul Ehrlich and physicist John Holdren (Erhlich and Holdren 1971). IPAT is shorthand for Impact (I) = Population (P) x Affluence (A) x Technology (T). The case of water resources in

the United States since the 1980s is an excellent illustration of IPAT, in particular, the potential of the Affluence and Technology factors to decrease per capita water consumption, in many instances achieving a reduction in overall, aggregate water consumption (I or Impact), even as the U.S. population continued to increase quite rapidly (graph).

Just what are these Affluence and Technology factors with respect to water resources? Affluence in this case refers to cultural/social/economic choices that either reduce water consumption or reallocate water to make it go further. In the arid Southwest, substituting expansive, inappropriate green lawns with xeriscaping – landscaping with drought-tolerant, preferably native plants – can sharply reduce residential and institutional water consumption. Taking shorter showers helps too. Similarly, replacing or retiring agricultural crops requiring large amounts of irrigation water, such as many fruits and nuts and water-intensive grains like rice can save huge amounts of water. Growing one head of broccoli takes 5.4 gallons of water, one walnut 4.9 gallons, one head of lettuce 3.5 gallons, one tomato 3.3 gallons, one almond 1.1 gallons, and so forth. The water that is saved by fallowing or not growing these crops can then be redirected toward urban areas and municipal uses. In theory, the food could be grown somewhere else with more abundant water.



Population growth in five Southwestern states (California, Nevada, Utah, Arizona, and New Mexico) from 1900 with projections to 2050

Water-saving technologies and water conservation, efficiency, and reuse offer tremendous scope for reducing water consumption both in agriculture and in municipal and residential uses. A few examples of water-saving technologies and systems available even now for crop irrigation include the following:

- Pressurized water application methods (drip or micro-irrigation)
- Drought-tolerant crops and seeds
- System modernization
- Water saving rice irrigation
- Controlled drainage
- Use of lower quality waters (water reuse and recycling)
- GPS-based technology
- Reducing wastage along the food chain

These are some of the technologies and innovations that are being invented and implemented at scale to reduce the aggregate amount of water needed to irrigate and grow crops as a result of increasing perceptions of scarcity. Similarly, a number of advances have been made in recent years that increase water efficiency and conservation in residential, commercial, and institutional settings.

Water efficiency, conservation, recycling, and reuse at home, in municipalities, and in irrigated agriculture can save large amounts of water and stretch existing developed supplies much further, but they cannot work miracles or accommodate infinite or rapid, sustained population growth. This is illustrated by the case of one of the largest water utilities in the rapidly growing state of Texas, the North Texas Municipal Water District (USACE 2015). Chapter 1 of the 2015 draft environmental impact statement (DEIS) on the Section 404 permit application to the U.S. Army Corps of Engineers for the proposed Lower Bois d'Arc Creek Reservoir identified the purpose and need for this water supply reservoir on a tributary of the Red River in northeast Texas: "State population projections show the... service area population increasing from 1.6 million to 3.3 million by 2060." Chapter 1 of the DEIS specifies that although advanced water conservation, efficiency, reuse, and recycling measures are able to offset a large share of the increase in municipal and residential water demand associated with a doubling of the service area population, they are unable to negate it entirely.

What is true for Texas is true for the USA as a whole: sustained population growth will inevitably, sooner or later, wipe out conservation and efficiency gains, triggering water shortages and/or a need for new environmentally damaging water projects. As noted earlier in this paper, water saved from conservation and efficiency should be returned to or left in aquatic ecosystems, not piped to a new housing subdivision or a new power plant necessitated by the nation's addiction to population growth. Water savings from efficiency and conservation should not be squandered to accommodate still more population growth.

Climate change and global warming will severely aggravate water scarcity in much of the United States, especially the booming Southwest and Southeast. Projected changes in precipitation patterns and reduced water availability will severely impact both ecosystems and economies in these regions. An intelligent response to this dilemma would begin by recognizing that unnecessarily adding tens of millions of additional residents to these beleaguered regions from mass immigration will only worsen the situation and occasion even harsher hardship, scarcity, and impacts.

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Ω

Leon Kolankiewicz is an "all-around ecologist" whose professional career spans three decades, three countries, and more than 30 states. He received a B.S. in forestry & wildlife management from Virginia Tech and an M.S. in environmental planning from the University of British Columbia (Vancouver, Canada). His career includes stints with the U.S. Fish and Wildlife Service, Alaska Department of Environmental Conservation, Alaska Department of Fish and Game, National Marine Fisheries Service, University of Washington, University of New Mexico, Orange County Environmental Management Agency, Carrying Capacity Network, and as a Peace Corps Volunteer in Honduras. As an environmental consultant, Leon has written, edited and managed many environmental impact statements on a variety of projects for multiple federal agencies and prepared more than 40 comprehensive conservation plans for national wildlife refuges from Alaska to the Caribbean. He has also authored reports examining the role of population growth in aggravating pressures on natural resources and the environment.

NOTE: The views expressed in this article are those of the author and do not necessarily represent the views of NPG, Inc.

Negative Population Growth

Negative Population Growth, Inc.
2861 Duke Street, Suite 36
Alexandria, VA 22314

Phone: (703) 370-9510
Fax: (703) 370-9514
Email: **npg@npg.org**

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PUBLIC INPUT ITEM 126

September 17, 2015

Colorado Water Conservation Board

To whom it may concern:

I am submitting these comments on the Colorado Water Plan (CWP) on behalf of the Open Water Foundation, an organization that seeks to improve understanding of complex water issues by improving access to data and information, and increasing transparency. These comments have been prepared by myself, based on my familiarity with the subject matter and review of Colorado Water Plan materials. The following comments do not wordsmith the latest draft of the plan or advocate for positions on water issues. Instead, they are general recommendations supplemented with specific examples.

1. **Make CWP data publicly available to increase transparency and facilitate issue-based dialog**. Colorado water issues are complex and the public can benefit from access to data behind the reports. Allowing the public to drill down to a level of their interest would also provide ongoing use of data resulting in feedback to improve future Water Plan efforts. The State has made progress in open data, including the Map Viewer on the Colorado's Decision Support Systems website and data.colorado.gov; however, the data behind the CWP are mainly published in PDF documents or are difficult to access. The following references are useful to understand open data:
    a. Sunlight Foundation Open Data Policy Guidelines – http://sunlightfoundation.com/opendataguidelines
    b. Book: "Beyond Transparency – Open Data and the Future of Civic Innovation" – http://beyondtransparency.org
    c. May 9, 2013 Executive order "MAKING OPEN AND MACHINE READABLE THE NEW DEFAULT FOR GOVERNMENT INFORMATION" (https://www.whitehouse.gov/the-press-office/2013/05/09/executive-order-making-open-and-machine-readable-new-default-government-)
    d. January 21, 2009 Presidential Memorandum "Transparency and Open Government" (https://www.federalregister.gov/articles/2010/04/27/2010-9706/publication-of-open-government-directive)

    Examples of specific datasets that would be useful if made available publicly include the following (this is not an exhaustive list):
    - Water Supply Reserve Account Grant database – extent of project, date of completion, benefits, link to report, periodic follow-up to understand whether benefits are retained over time
    - List of Substitute Water Supply Plans – would demonstrate that short term water sharing is occurring in a free market and therefore some level of ATMs are inherent in the system
2. **Consider merging the South Platte and Metro Roundtables**. John Wesley Powell recommended that political boundaries in the arid Western United States should align with river basins (see: http://bigthink.com/strange-maps/489-how-the-west-wasnt-won-powells-water-based-states). It is strange then that Colorado is one of two states (the other being Wyoming) that are substantially rectangular. Similarly, one might question why the Metro Basin Roundtable area has been carved out of the South Platte Basin. At a time when Front Range demands for water

are increasingly turning to South Platte agriculture and other sources in Northern Colorado, it would seem that the Metro and South Platte Roundtables should work closely together to address full South Platte Basin water issues. Combining the Roundtables would also offer some economies of scale, including allocating grant funds for multi-purpose projects that have basin-wide benefits.

3. **Clarify terminology**. The CWP, Statewide Water Supply Initiative (SWSI), and Basin Implementation Plans (BIPS) all suffer to a degree from a bad choice of terminology. Only recently has the discussion moved from "new supply" to "transbasin diversions", and "environmental and recreational" rather than "nonconsumptive". "Projects", "processes", "methods", etc. can also be confusing. If there is baggage from the past, it should be clarified in the CWP, or at least plan for cleaning up in the future. The plan document should deal with terminology and concepts that continue to lead to confusion. Perhaps have a short section up front that addresses these terms so that readers of old documents understand how a transition has occurred and may continue to occur. Don't assume that a reader of the CWP understands the history of how terminology has changed over time.
4. **Consider the role of watershed coalitions in Basin Roundtables**. The CWCB is supporting the establishment of watershed coalitions for stream restoration and other environmental purposes. Perhaps these coalitions could form a nexus of representation at a local level and have representation on the Roundtables. Other groups such as the Poudre Runs Through It Study/Action Work Group could also play a role, if only to report back to the Roundtable periodically. Much progress is made through local groups but is not represented at the Roundtable level, at least based on experience with the South Platte Roundtable. It is likely that local coalitions do not necessarily want to attend long Roundtable meetings, but improved coordination could be beneficial, especially when funding projects to have impact.
5. **Increase programmatic support for each water supply area with focus on key outcome areas**. SWSI utilized the phrase "four legs of the stool" when discussing water supplies: water conservation, identified projects and processes (IPPs), agricultural transfers, and new supply (transbasin diversions). The CWCB already has programs in place for a number of these areas, in particular water conservation. Other areas receive support in various ways but perhaps not clearly tied to CWP outcome areas. If programs were funded in proportion to the amount of water supply in a leg of the stool, then agriculture would have the largest program area funding and staffing. However, the Alternative Transfer Method (ATM) program at the State does not appear to have staff other than to administer the grant program and the ATM program may not be appropriate for addressing broad agricultural water supply issues. Concepts like increasing agricultural efficiency (e.g., converting from flood irrigation to center pivots) and agricultural impact studies (e.g., understanding impact of water transfers on agriculture) have merit. Perhaps the time has come for the CWCB to more aggressively invest in agriculture as a watershed for water supply, including grant programs to help ditch companies develop long-term plans to ensure that systems are efficient and sustainable, with appropriate incentives.
6. **Seek to understand water issues at a system level.** Water issues are complex and connected, yet many solutions are localized, resulting in a more complex administrative system and death by a thousand cuts to agriculture and the environment. Perhaps when discussing measureable outcomes, as the Governor has requested, we should be developing multiple levels of metrics to understand systems, and these metrics could guide ongoing programs, system operations, and education. Below are some examples:
    a. Understanding return flows and water use efficiency at geographic scale. In other words, estimate the efficiency of (re)using water in a local basin, in a larger watershed, and for the whole basin. Perhaps calculate efficiency at a point for the watershed above

the point. Such a metric could illustrate that water (re)use is actually very efficient in some areas despite public perception, and it might point out areas where improvements can occur.

b. REALLY understand the impact of conservation, water use efficiency, reuse, etc. from upstream to downstream. Invest in South Platte Decision Support System modeling to understand broad questions that can provide insight on contentious topics. There will always be questions about models but they provide a baseline for discussion.

c. When evaluating IPPs and new storage, understand the multiplier effect of a project. For example, if a reservoir is built higher in the basin and ultimately allows a drop of water to be used a multiple of times (compared to without the reservoir), then an IPP essentially addresses the water supply gap at a multiple of its yield. This could result in the gap being smaller than when using the initial diversion only as the demand. There may be issues with a project proponent only wanting to focus on the benefit of their project to their customers, but secondary benefits that should be considered somehow when evaluating statewide issues.

d. Evaluate how much additional storage would be available if all existing reservoirs were rehabilitated, raised, etc. Investing in system-wide evaluation that is periodically updated, with connections to loan and grant programs, could achieve defined program outcome areas.

7. **Increase innovation including funding an incubator program**. Water stakeholders, especially those tasked with providing certain water supplies, are generally leery of changes that may result in unintended consequences and increase risk. One way to address risk is to place restrictions on programs, such as "3 years in 10". It is also common to fund pilot programs. But what happens when the pilots "fail" (do not produce a desired outcome)? Perhaps such programs are defunded or lose favor because they seem to not be returning results on the investment. As a leader of a nonprofit working on complex issues, it is clear to me that many programs need to be less risk-adverse and need to allow for longer periods of investigation. Below are some ideas:

   a. **Establish an incubator program for cutting edge innovation** – The State could invest in research and development on an applied level. This could occur through a grant program and/or support of organizations focused on innovation. Innovation could occur at local scale (e.g., residential water efficiency) or large scale (e.g., aquifer storage). The key would be to relate incubated projects with the outcomes that are desirable to State agencies, and also leverage funds. Particular attention should be paid to learning from failures and calling off pilots early if it is clear that they will not perform – then invest the funding in other pilots.

   b. **Go big** – I don't know if it is possible, but what if an entire stream or river basin agreed that they would participate in a large-scale study to understand a key issue or connected issues, and everyone outside the basin agreed? Long ago, irrigators in the Poudre River coordinated on turning their headgates on/off so that river gains and losses could be studied. Today, it seems that such an effort would require legislation or would never happen because of concerns about injury. Is it possible that water users could declare a "time out" from daily accounting and allow larger experiments to occur over a region for a season or a year? What would it take?

8. **Additional automated and crowd-sourced data collection, and use of such data**. Technologies are now available to collect huge amounts of data. These technologies should be applied to automate collection of key data parameters, such as streamflow at key administrative locations. This will allow for data-driven system operations to benefit multiple purposes such as moving

water through river systems to sustain environmental flows while also delivering water to municipalities and agriculture. The State has already invested in additional data collection, such as more gages for the South Platte. However, investing in additional data collection may provide one of the largest returns on investment. In addition to formal data collection programs, the State could also rely on crowd-sources data. For example, consider the following datasets that could be developed through incubator programs described above and could be guided by best practices for data measurement:

a. Well-level measurements – in particular, groundwater levels in the South Platte have been the focus of the HB 1278 study and ongoing efforts to address issues in Sterling and Gilcrest/LaSalle areas. What kind of analysis and system optimization could occur if crowd-sourced data for well levels provided data at hundreds or thousands of locations?
b. Localized precipitation measurements – the CoCoRaHS program of the Colorado Climate Center already allows the public to collect and report precipitation data. What if such data were utilized to evaluate the impacts of rainwater harvesting on a large scale? Rather than debating legislation based on conjecture, large datasets could be used to support analysis on a large scale.

I hope that this input is useful in the preparation of the final CWP and may help provide solutions to Colorado water issues.

With regards,

Steve Malers
Founder and Chief Technology Officer
Open Water Foundation

PUBLIC INPUT ITEM 127

First Name: Elle
Last Name: Brunsdale
Affiliation:
Email: elle.brunsdale@yale.edu
Phone (Example: 000-000-0000): 3035701054
Cell Phone (Example: 000-000-0000): 3035701054
River Basin: Statewide
Constituent Group: Policy
Comments to be considered in Colorado's Water Plan:
Members of the CWCB and All CWP Participants:

I write to express support for the incorporation of water banking as a key strategy in addressing Colorado's water challenges. As mentioned in Chapter 2 of the Colorado Water Plan, "Moving Forward," the evolution of Colorado water law through the courtroom and the legislative process presents both challenges and opportunities. The CWP recognizes that the Alternatives to Agricultural Transfer Grant Program, new legislation, water-court rule changes and ongoing studies and processes on water banking demonstrate how the complex system can adjust to increase the flexibility of prior appropriation. I devoted my senior thesis to exploring how water banking and alternative transfer mechanisms (ATMs) might allow for an institutional "update" of Colorado's water governance framework to enhance our ability to adapt to changing environmental, social, and economic conditions (see attached).

While there have been some legislative efforts to simplify the process and support evolving water uses in Colorado (as noted in CWP, Chapter 6: SB 05-133, HB 13-1130, SB 13-019…), many of these reforms have not trickled down to the by-law level of mutual ditch and irrigation companies where disincentives to conserve water still exist. While the current draft of the CWP refers to several water banking initiatives (see the Appendix of attached document), it can and should go further in outlining a strategy for incorporating market-based economic incentives to meet Colorado's water needs.

Key Recommendations:
1. Encouragement BIPs to outline specific strategies for incorporating water banking and ATMs as a solution. Water banking is only mentioned in the Yampa plan, which has not yet identified specific ATMs to meet its goals.
2. Create a working group to propose additional legal adjustments to Colorado water law to increase the flexibility of prior appropriation. Water banking has evolved slowly in Colorado because it has been authorized on a case-by-case basis. Additional legal adjustments are necessary to allow for state-wide experimentation of water banking approaches and scalable projects.
3. Continue to support efforts of the Colorado River Basin Water Bank Working group. The CWCB might also consider exploring similar water-shed level projects for other basins in the state such as the Arkansas and the Platte.

In the attached document, I summarize the major institutional barriers to incentivizing water conservation and provide lessons learned from the

Arkansas River Water Bank Pilot Program (2001-2006). Thank you for your consideration of these comments.

PUBLIC INPUT ITEM 128

EAGLE RIVER
WATER & SANITATION
DISTRICT

UPPER EAGLE REGIONAL
WATER AUTHORITY

September 8, 2015

Mr. James Eklund
Colorado Water Conservation Board
Department of Natural Resources
1313 Sherman Street, #721
Denver, CO 80203

Re: Eagle River Water & Sanitation District and Upper Eagle Regional Water Authority Comments on the Second Draft of the Colorado Water Plan

Dear Mr. Eklund:

The Eagle River Water & Sanitation District (District) and Upper Eagle Regional Water Authority (Authority) are separate entities that have an integrated water system that provides water service to over 60,000 customers from Vail to Wolcott. Collectively, they are the west slope's second largest municipal water providers.

The District and Authority have reviewed the second draft of Colorado's Water Plan and support the State's strategic goals and actions outlined in that plan which consist of the following:

- the development of a multipurpose state funding plan for water projects that are consistent with the state plan
- the promotion of initiatives that protect water quality, additional storage and streamline the permitting process
- the promotion of sustainable cities which includes municipal conservation, encouraging reuse, and integrating land use and water planning
- efforts to address agricultural efficiency as over 90% of the state's water use is agricultural irrigation
- the support of a robust recreation industry that includes enhancing recreational economic values such as municipal recreational in channel diversions and whitewater courses
- efforts to prepare for an uncertain water future given interstate compact entitlements and demands, and potential future changes in climate

Moreover, the District and Authority especially appreciate and support the section at page 326 of the Colorado Water Plan that discusses the State's role to insure that a proper balance is maintained between the State and federal role in Colorado's water law and water management system. In particular, the District and Authority support the statements in this section which indicate that the recent directives of the U.S. Forest Service exceed federal authority, and that Colorado maintains that federal bypass flows are not a preferred method for managing water on federal lands. It is important that this section be maintained in the final version of the State's Water Plan.

It should also be noted that the municipal water gap set forth in the Water Plan is characterized as a total water use, rather than a consumptive water use. This metric fails to recognize that municipal water uses are significantly less consumptive than agricultural uses and overstates the magnitude of the State's water gap. This ignores the potential for reuse and land planning to meet future municipal needs, and overstates the need for, or the amount of, a future transmountain diversion.

Water is undoubtedly one of the State's most precious and important resources, and the District and Authority look forward to receiving the final version of the Colorado Water Plan. We urge that it continue to provide a positive roadmap to meeting the State's long term water objectives, continue to assure the proper balance between the State and federal roles in Colorado's water law and water management system, and recognize that the less consumptive nature of municipal uses reduces the true nature of the State's water gap.

Sincerely,

Frederick P. Sackbauer, IV,
as Chairman of the Board of the Eagle River Water & Sanitation District

George Gregory,
as Chairman of the Board of the Upper Eagle Regional Water Authority

cc: Linn Brooks
Glenn Porzak

PUBLIC INPUT ITEM 129

State Representative
J. PAUL BROWN
P.O. Box 178
Ignacio, CO 81137
Business: 970-759-4157
Office: 303-866-2914
E-mail: jpaul.brown.house@state.co.us

Member:
Agriculture, Livestock & Natural Resources Committee
Health, Insurance & Environment Committee
Capital Development Committee

COLORADO

HOUSE OF REPRESENTATIVES

STATE CAPITOL

DENVER

80203

September 17, 2015

To the Colorado Water Conservation Board:
Comments on Colorado's Water Plan by Representative J. Paul Brown

I want to thank Governor Hickenlooper for the Executive Order for the State Water Plan. It has stimulated the discussion of the most important need in Colorado today.
I have had concerns about transcontinental water diversions for many years. We are at a point that the West Slope simply does not have water to send to the Front Range. I have studied for several years the water that is leaving the State in the South Platte River that could and must be stored. Just this Spring, it is estimated that close to 2 million acre feet of water escaped the State into Nebraska in the South Platte because there is no storage facility on the South Platte that can capture this water. Additionally, two different floods in the last few years yielded 1 million acre feet each that was not captured. Every year during the Spring runoff there is water wasted that could have been stored. We have no water to waste and must capture every drop. After spending a year studying potential storage sites, I believe we should build that "Narrows" reservoir that was planned many years ago. It may not have been feasible then, but it makes sense now.

Storage on the South Platte must be the number 1 priority in the State Water Plan for the following reasons, benefits, and solutions of problems:

1. The South Platte is the only water drainage in Colorado that does not have storage on its main stem.
2. Water will be stored and storage water rights established by municipalities and others.
3. It will take pressure off of the need to buy and dry agricultural land.
4. It will decrease the demand for transcontinental water diversions.
5. It will protect the environment by keeping more water in the streams on both sides of the continental divide.
6. It will guarantee senior water rights downstream and compact requirements to Nebraska.
7. It will guarantee water for endangered species and fish along the South Platte River.
8. It will allow for the pumping of wells that have been shut in along the South Platte which will lower the ground water levels in fields and basements and also increase agricultural production in these areas.

9. It will provide for flood control.
10. It will provide for any augmentation required for rain barrels.
11. It will allow for the recharge of the Denver aquifer and other aquifers.
12. It will allow for the storage of conserved water.
13. It will provide recreation opportunities.
14. It will provide habitat for wildlife and fish.
15. Many, many other benefits.

Thank you for your consideration.
Again, this should be the top priority in the State Water Plan!

Sincerely,

J. Paul Brown
State Representative
House District 59

PUBLIC INPUT ITEM 131

the ROCKY MOUNTAIN CLIMATE Organization
303-861-6481
PO Box 270444
Louisville, CO 80027
rockymountainclimate.org

Comments by Stephen Saunders, President
The Rocky Mountain Climate Organization
On July 2015 Draft of Colorado's Water Plan

September 17, 2015

Thank you for the opportunity for the Rocky Mountain Climate Organization (RMCO) to provide these further comments on the current draft, dated July 2, 2015, of Colorado's Water Plan. RMCO previously submitted two comprehensive sets of comments on earlier drafts of the state water plan—in October 2014, on the early working drafts of the plan, and again in May 2015, on the first official draft, dated December 2014. In both sets of comments, we focused primarily on the consideration of climate change and its potential impacts on Colorado's water supplies and water quality. We applaud the continued improvements that each version of the draft report has made on this topic. In the latest draft, for example, somewhat more detail has been added to the explanations of climate change impacts on both water supplies and demands for water.

However, many of RMCO's previous comments continue to apply to the current draft. While we do not repeat them all here, we still believe it important that the plan be further revised to bring into sharper focus what the state government, water suppliers and users, and the general public should understand and can do to fully address the substantial risks that climate change poses to water supplies and water quality. This continuing concern is consistent with other comments received on the draft plan. Last October, Denver Water commented, "the climate change portion falls short. . . . While some general information is provided in the Plan, the full breadth of the potential impacts of climate change needs to be explicitly included and explained." In April, the Front Range Water Council commented, "Climate change is potentially an equal or greater contributor than population growth to the state's looming future water gap," and identified five new recommended actions to be included in the plan to address climate change, including, "The state needs to identify potential impacts from climate change in the municipal and agricultural supply and demand projections in the state water plan under reasonable future climate scenarios." Despite the addition of somewhat more discussion of climate change in the July draft, these comments, as well as RMCO's similar earlier comments, still apply to the that draft of the plan. In a view we know to be shared by others, we urge the CWCB to continue making improvements in the plan's explanation of how climate change is likely to substantially increase Colorado's future water gap.

We now understand that further detail will not be provided in the final water plan but instead in next year's Statewide Water Supply Inventory (SWSI) 2016 update for two key elements. The first of these is an analysis of climate change impacts on water demands, and the second is a quantification of the projected water supplies and demands—and the resulting gaps—assumed in the different scenarios, against which basin implementation plans and future actions are to be measured, but which are now defined by only general, subjective descriptions. Further detail on both of these elements is essential to guide the selection of the policies and actions that will be necessary to meet our state's water needs in a future with a changed climate, and we are pleased that additional work is going forward to provide the state government, basin

roundtables, water providers, and others with the needed detail. We look forward to reviewing and commenting on this work as SWSI 2016 documents are prepared.

We also wish to emphasize the good work of the CWCB in including in the July draft water plan the new chapter 10, Critical Action Plan, outlining actions that the state may take to address future water needs, including climate change impacts. This new section both pulls together previous items from other chapters and also includes new potential actions not included in previous drafts. This draft chapter now provides an essential overall framework for what the state government will actually do going forward to address the water challenges outlined in the plan. This is a great improvement in the draft plan.

We focus the remainder of this third set of RMCO comments on the draft water plan on a single important recommendation, included in our May comments—that the state water plan should include a new action item, the creation of an advisory council to advise the state government on identifying and addressing climate change risks to the state's water supplies. This was first proposed by the Colorado Water Working Group, Getches-Wilkinson Center, University of Colorado School of Law, in its April comments. The working group recommended that "the Governor establish a task force of climate scientists, water suppliers, water users, and other representative interests to identify those aspects of water use in the state that are most at risk because of climate change and to develop guidance for the basin roundtables and water suppliers and managers for managing these risks." As we stated in our May comments, RMCO supports this recommendation. We would like in these comments to elaborate on this recommendation and its value.

To begin with, we suggest that this proposed group is better described as an advisory council, not a task force. It is not intended to take decision-making away from state officials, but to provide recommendations to the state.

A new, broadly representative advisory council, with membership reflecting different interests and fields of expertise, focused exclusively on the challenges of climate change to our water resources, is warranted by the scope and complexity of those challenges. The dimensions of those challenges are underscored by what is now happening elsewhere in the West, as other states grapple this year with the consequences of last winter's snowpack drought and record heat both in the winter and the summer. California's 2015 snowpack, only five percent of normal, has been judged to be the lowest in the past 500 years. Washington and Oregon experienced normal winter precipitation, but because of unusually high temperatures it fell more as rain and less as snow, and what fell as snow melted early. All three states are now struggling with water shortages and restrictions, agricultural impacts (as estimated $2.7 billion of farm and ranch losses in California alone), ecosystem disruptions, and wildfires. We in Colorado were spared these impacts by this year's Miracle May of unusual precipitation. In other years, we may not be so lucky. What is unfolding on the West Coast is the most powerful lesson yet that we face new challenges that will take our best efforts to address.

Fortunately, Colorado is blessed with an abundance of expertise on climate change impacts on our water resources, with many experts in our universities, government agencies, water providers, private sector, and nonprofit organizations. However, we do not yet have a sufficient mechanism to fully draw on that expertise to help the state government shape policy and take other actions to meet our climate change/water impacts. The CWCB's Climate Change Technical Advisory Group, while important, serves a limited, technical role, primarily reviewing the proposed scope and then the methodologies of relevant state-commissioned studies, rather than considering broad questions of the state's overall needs (including new policies) in

addressing climate change impacts on water. Continuing the CCTAG is important, and adding a higher-level, policy-oriented advisory council is at least as important.

The existing broadly representative groups that help shape Colorado water decisions and discussions, including both the Colorado Water Conservation Board itself and the Interbasin Compact Committee, do not have either a particular focus on climate change impacts nor the memberships chosen to best consider and address those impacts. Climate change poses great risks to our water resources, and it deserves the more comprehensive and detailed attention that the advisory council offers.

The potential value of a climate change/water advisory council is illustrated by a recent report by a similar body in California, *Perspectives and Guidance for Climate Change Analysis*. Although prepared by a group known as the California Department of Water Resources' Climate Change Technical Advisory Group, this report bears no real resemblance to the work of our state's CCTAG and instead suggests what an advisory council with a higher, broader mandate can do. The California group was created to advise that state's DWR "on the scientific aspects of climate change, its impacts on water resources, the use and creation of planning approaches and analytical tools, and the development of adaptation responses." The group's *Perspectives and Guidance* report provides technical information for the state agency and the state's water providers on the use of climate models and associated technical tools for water resource planning. This kind of comprehensive framing of one important aspect of what is needed to address climate change would be important here, as it is in California. Another part of what an advisory council here could do, recommending adaptation policy responses, would be even more important.

Thank you for the consideration of these further comments from the Rocky Mountain Climate Organization.

PUBLIC INPUT ITEM 132

First Name: William
Last Name: Chipley
Affiliation:
Email: whchipley@fastmail.fm
Phone (Example: 000-000-0000): 970-708-1046
Cell Phone (Example: 000-000-0000): 970-708-1046
River Basin: Statewide
Constituent Group: General Public
Comments to be considered in Colorado's Water Plan:
Hello - Thank you for this opportunity to comment on the 2nd draft of the Colorado Water Plan.

I live within the Uncompahgre River watershed of SW Colorado and make regular use of the many in-stream recreational activities afforded by a healthy riverine environment - whitewater boating, fishing, hiking river-side trails and bird watching. I also enjoy doing much of the same on other nearby rivers and streams within the San Miguel River, Dolores River and Animas River watersheds and I feel that my quality-of-life in Colorado is greatly influenced by my continued access to these and other healthy river systems throughout the state.

I am encouraged that the Water Plan recognizes many of the values that I hope we preserve for all Coloradoans:

- A productive economy that supports vibrant and sustainable cities, viable and productive agriculture, and a robust skiing, recreation, and tourism industry;

- Efficient and effective water infrastructure; and

- A healthy environment that includes healthy watershed, river, streams, and wildlife.

As we grow, how we grow is extremely important. Every basin talks about storage and I hope that state endorsement for every future water project is not automatic. The Colorado Water Plan needs common-sense criteria for future water projects and water management so that we grow smart.

I believe recreational water needs are currently overlooked and under-evaluated in the Plan. I ask that the State show leadership in assigning Roundtables a specific set of metrics for development, and that the state partner with stakeholders like American Whitewater to assess demands for recreation - both in defining flows that support recreational opportunities, and in developing a quantitative baseline for assessing the impact or enhancement to recreation from any future project. Currently, only the Yampa and Colorado river basins are pursuing appropriate metrics (boatable days). Until each Basin, and the State develop a common set of metrics for evaluating recreational values, and apply these metrics consistently to local stream, basin, and trans-basin planning, the Colorado Water Plan will not reach its full potential

River based recreation, including fishing, boating, and the enjoyment of healthy riparian areas for hiking, picnicking and camping, is a core part of this economy – all which the draft Colorado Water Plan recognizes. However, the Plan does not address the economic impact of river-based recreation to the State economy, and I encourage the CWCB to honor the recreational value of water by studying and reporting economic impact data by Sector, including Recreation.

While many of the States programs help meet recreational water demands, and protect them in priority, I would ask the Colorado Water Conservation Board to support legislation to allow a Recreational In-Channel Diversion right to protect boating flows for a segment of river using a stream gage, rather than a control structure as currently required under state law. This simple change would more easily align RICD rights with other water demands, like Endangered Species recovery programs and In-Stream Flows, and help eliminate some of the environmental concerns with building concrete structures in our rivers.

Whether any reach of stream in Colorado has any recreational needs or protections (ex. ISF or RICDs), the public's legal rights to recreate on those streams in not fully recognized by state law. The Colorado Water Plan and the Governors's Executive Order offer a great opportunity to clarify the public's rights to recreate on our streams and rivers, and to align the activities of CWCB with those of Colorado State Parks, Department of Outdoor Recreation Industry, and local tourism offices to protect both sufficient flows and provide safe access to high-value recreational streams.

Lastly, as our population grows, please increase funding and scope for water stewardship education. Much of the public is not aware of the magnitude of our water challenges. As a paddler, I have a direct and intimate connection with water, and I would like to change the culture and our relationship with water through comprehensive education and experience. Our often overworked rivers support so much, and yet provide priceless opportunities for self-improvement, personal challenge, and quiet contemplation. Every Coloradan must understand the value of water, not just the cost.

Thank you for your efforts in creating our Colorado Water Plan and for the opportunity to comment in this collaborative process. Please feel free to contact me with any questions or for additional information.

Sincerely,

Bill Chipley
Ridgway, CO
970-708-1046

PUBLIC INPUT ITEM 133

COMMENTS of JOHN D. WIENER, J.D., Ph.D., not representing any institution.
(john.wiener@colorado.edu).

This set of comments will not repeat the great majority of the comments submitted on the first draft; the CWCB staff did an amazing job of coping but has not been directed to address the very serious underlying issues, and this second set of comments will focus on those, with only a few notes on particular points. Unless we get serious about the future, the technical issues such as not expecting dust on snow to radically increase with Utah land use policies and climate change, and Arizona's drought will not have much impact.

(1) A general comment from John Wiener – Jumping the Ditch… what is needed. This is not the "one-pager" for those who can't spend more than 5 minutes. This is a synthesis of real information, with an impassioned complaint about the situation.

(3) Two stories from the Denver Post (copyright Denver Post), on business as usual – Denver Water deals on the Fraser River. The private property rights in water mean that the market continues to work no matter who is talking; what does that mean for the State Water Plan? The stories were copied in the previous comments; here, only the URLS and titles are given.

And (4) a short sample of background on land loss in Colorado Agriculture. There is serious need for an update on the extent of rural residential development, particularly affecting agricultural and irrigated lands. The damage from landscape perforation is not limited to making the Wildland-Urban Interface an indefensible unmanageable mingling of public and private property. Added, also, some additional information on the financial vulnerability of small agriculture.

A few of the comments are repeated:

Section 5.7 Alternative Agricultural-to-Urban Transfer Methods as of 15 May 14

This is a disappointing section as of 15 May 2014 because there is a great deal more information available from the state in reports on the various projects which have had state funding, such as the high-end irrigation and observation system being developed to facilitate transfers in the SWIIM project and elsewhere.

See: http://www.swiimsystem.com/home.aspx

Comment: P 1 of draft dated April 2014 initial draft: One projection is loss of 40% of present remaining South Platte irrigation by 2050 without change in rates of buy-and-dry. This may be understating the impacts, because the South Platte is a "gaining" river after it leaves the Denver Metro area. It actually increases in surface flow because of all the irrigation and seepage that is coming in, as well as the tributaries. So, where the water would come from is related to the issues of transferability to the urbanizing areas, which may mean buying the most senior and moving diversion to the metro. The most senior tend to be the closest to the mountains, where

the land is most valuable as well. The pressure on the peri-urban open space, amenity, and ecosystem services provided by the very best land closest to local markets may continue to be the highest, with the biggest impact on all values.

The long history of alternative transfers elsewhere is not mentioned, from other states. A great deal of Colorado effort might also be noted.

Three overviews:

Clifford, P., C. Landry, and A. Larsen-Hayden, 2004, Analysis of Water Banks in the Western States. Olympia, WA: Washington Department of Ecology, Water Resources Program. Available on website at: <http://www.ecy.wa.gov/biblio/0411011>.

Schempp, A., 2009, Water in the 21st Century: Policies and Programs that Stretch Supplies in a Prior Appropriation World. Washington, D.C.: Environmental Law Institute.

Western Governors' Association, 2012, Water Transfers in the West: Projects, Trends, and Leading Practices in Voluntary Water Trading. http://www.westgov.org. (accessed 11 Dec 12).

Some other references:

Colorado Water Institute, Smith, M.L., Ed., 2010, Agricultural/Urban/Environmental Water Sharing: Innovative Strategies for the Colorado River Basin and the West. Fort Collins, CO: Colorado State University. < cwi.colostate.edu/publications/sr/22.pdf>. (accessed 15 May 2014).

Arkansas Basin Roundtable, 2008, Considerations for Agriculture to Urban Water Transfers. Report of the Water Transfers Guidelines Committee; adopted Roundtable and forwarded to Colorado Interbasin Compact Committee, Roundtables, and Colorado Water Conservation Board. <http://cwcb.state.co.us/water-management/basin-roundtables/Documents/Arkansas/AgToUrbanReportABRTNov08.PDF>. (accessed June 12, 2011).

Nichols, P.D., M.K. Murphy, and D.S. Kenney, 2001, Water and Growth in Colorado: A review of Legal and Policy Issues. Boulder: University of Colorado, Natural Resources Law Center.

Olinger, D. and C. Plunkett et al., 2005, "Liquid Assets – Turning Water into Gold", multi-part series with sidebars, 21, 22, and 23 November 2005, The Denver Post.

Palo Verde Irrigation District, "The PVID/MWD Program." Accessed February 2008. http://www.pvid.org/PVIDMWDProgram/tabid/58/Default.aspx.

Comment: the critical problem in most of the Colorado thinking is a failure of simplicity, based on observations of many years of meetings including the SWIS basin and technical roundtables

and following the discourse in some basin roundtables, Colorado Water Congress, and many other meetings and reports.

The underlying need is not to incrementally finagle water law dating back to mining in the gold rush, but to think about what is needed. Cities require certainty of supply to the extent that they choose to supply growth. Agriculture needs certainty of supply or finance to the extent that is needed to sustain productivity, farm viability, and conserve the agricultural landscapes that provide enormous values. These values include food, fiber and feed, and ecsosystem services, wildlife, amenity, recreational value and to the extent that the landscape is preserved in functional condition, flexibility for the future. The increasing value of price-stabilized bio-fuels is also an opportunity that cities should accept; grow your own.

To the extent that the landscape is perforated with other land uses, drained of irrigation, and deprived of so-called inefficiencies which support the existing riparian environment and the myriad un-paid services it provides, we and the future are impoverished permanently.

The leap is this; recognize that long-term or permanent partnerships are needed using municipal capacity and finance and demand to support conservation of irrigated agriculture and its values, especially in the peri-urban areas so rapidly being lost. There are two steps already in use, which are not sufficient. First, lease-backs from municipal buyers to irrigators of water bought in advance of need are a kind of short-term partnership which will not support long-term management and investment in permanent agriculture. Conservation easements stabilize land use but do not provide financing for adaptation as conditions change, and are limited by the expense and private funding capacity. Permanent municipal-agricultural partnerships are the answer.

Ultimately, some situations such as complicated conjunctive management will need basin-scale management, but now the needed step in transfers is most closely followed by the " flex marketing bill" (HB14-1026) which was first introduced in 2014. A modest version should immediately be modeled out with conversations among cities and irrigators, with state support and the Colorado Water Institute.

The draft lists several "ATMs" – here is the very short critique of each:

Rotational Fallowing -- can be good, but so far not clear that deals have been good for (1) ensuring cover crop on fallowed land; and (2) schedule of prices to cover inputs and costs if water sought to be taken at different stages of planting; this could be important and provide security for both sides.

Interruptible Supply – This is a good idea, but lacks flexibility and security because of the legal limit to only three out of ten years. It should also be designed to provide more security and flexibility, and allow transfers in wet years where additional recharge is sought and crops might be produced with less irrigation. And, the time limits do not meet the desires for permanence.

Note: "Permanence" in contracts and human planning is an idea, but it has a lot less weight than the permanence of irreversible damage and loss, such as destruction of capacity, loss of soil and

soil-forming conditions, etc. It is unlikely that any deal will last centuries, but it is important that the legal and financial systems be able to support the best possible use of resources.

Deficit Irrigation – Excellent technology balancing crop versus other uses of water, and it should be supported with locally developed "presumptive" figures. That is, a set of figures, which would be on the safe side, to enable a transfer unless objectors demonstrate they are wrong. This will take some investment and some verification over time, but should be pursued.

Water Coop – This may need refinement to enable different scales of management, and may need a presumptive start for maintenance of riparian vegetation and avoiding problems with inadequate flows and water quality/biology problems.

Water Bank – There are many working models; the critical problem with new ones in Colorado would likely be limits that prevent using the bank to meet security/long-term needs, which would defeat the formation of a good working market. Where they are successful, as in Idaho's water pools and the Northern District, they are supplemental to other transfers.

Water Conservation Easement – Fine idea, and may be better with increased clarity of use of short-term for drought flow needs versus permanent dedications. There are important limits on the private funding for purchase of easements, even with State tax credit transferability.

HB13-1248 – Pilot projects – Should include serious examination with GIS etc. support for re-thinking peri-urban agricultural conservation with municipal partnerships. Wiener has sought to illustrate this with an informal presentation, "Thanks and think BIG", and substantial reporting, "Re-vision of a Western Irrigated Area" and posted illustrations, maps, etc… available on web at www.colorado.edu/ibs/eb/wiener/.

Flex Water Marketing – HB14-1026 was headed in a good direction, and should be tried, but it remains a lesser form than a real partnership as urged here and elsewhere. It is better to make some progress but as argued here, you cannot jump a 10 foot ditch one foot at a time, and we ought to get on with making the best possible arrangements.

Lease-backs – This is a "soft landing" for farming, but it does not support long-term investments in transition to sustainability, and may in practice guarantee that such transitions will not happen.

II. A Comment on Goals and Needs

Jumping the Ditch – About the State Water Plan, Climate Change, and Agriculture

John D. Wiener, J.D., Ph.D john.wiener@colorado.edu

(<www.colorado.edu/ibs/eb/wiener/ -- more information available) September 2015

A Personal statement, not representing any agency or institution in this comment

The Second Draft of the Colorado Water Plan is **necessary but not sufficient** for the long-term security and productivity of Colorado agriculture and a great deal of the quality of life provided for the urban populations by peri-urban open space, watershed and water quality services, recreation, amenity and tax values. After the Statewide Water Supply Initiative, great State agency work, the Basin Roundtables and Interbasin Compact Committee work for many years, it is critical to admit what we do know and explore what we do not know.

What we do know is that **climate change** impacts are already observed and stressing food security and this has barely begun and will strikingly increase, making the conservation of agricultural capacity worth a great deal more in the near future than in the present (some new references since comments on the first draft: DeLong, Cruse and Wiener 2015, Earth Economics 2014, Gordon and Ojima Eds., 2015, Hatfield et al. 2015, Lal 2015, Melillo et al. Eds., 2014, Nelson et al. 2014, Suweis et al. 2015; and for the basics, see the National Research Council, 2010, Toward Sustainable Agricultural Systems in the 21st Century.)

"A hard rain is gonna fall…" and more often and earlier and later in the year… One of the consequences of more energy in the atmosphere is more intense precipitation; this has already been observed almost everywhere that competent observations are made, and is universally expected by non-fossil-fuel-funded scientists to increase (e.g. IPCC 2012). Seasonality is changing and more rain is expected instead of snow, earlier in the Spring, as well as later in the year from convective thunderstorms. Meanwhile, glyphosate resistance was reported on 51% of corn and soy farms reporting to Farm Industry News (2013; see also Council on Agricultural Science and Technology 2012, National Research Council 2012).

Inability to rely on glyphosate induces use of additional herbicides, about which we will someday know more concerning toxicity, and at whatever cost the buyers will bear, but it also means that there is likely to be significant reversal of the trends toward no-till. Hard rain, before emergence, on land with tillage… But, our traditional estimates of the rate of soil erosion have been very likely considerably lower than correct (Cox, Hug and Bruzelius, 2010; Des Moines Register 2014).

Another thing we know is that **despite the brilliance and diligence of excellent people playing very hard with the wrong set of rules**, there have been **no truly new ideas** in water transfers for decades… I write this reluctantly, because there is no group whom I more appreciate and want to work with and for than the people involved with agricultural water, but the bottom line is that we are hamstrung by the 18th Century origins of prior appropriation water law (see Schorr 2012 for the best single explanation) and the **inability to think past water law** into truly seeing the bigger picture. There are some fine vague principles in the Second Draft, from the BIPs, but the horns of the dilemma remain… We are wasting brilliant people, superb technology and millions of dollars on "teacup injuries" – avoiding transformational change and new thinking while struggling over incremental tinkering and demanding absurd precision from vague and no-longer representative data. If the status quo were fine, why are so many dreams being crushed? Why is there an endless chant throughout the Second Draft that we have to do better?

Working with the **wrong rules** often means going around in circles; one of the smartest groups of water people, with one of the best and most professionally informed water facilitators in the West just wrapped up a two year effort and came up with a slightly new idea "buy-and-supply", which is use of an intermediary to establish a partnership between a permanent municipal right to call for water under some conditions, a permanent agricultural right to use it under other conditions, and some public support through an agency or an NGO and easements. This is, one one hand, a nice new bottle for the kinds of partnerships and arrangements discussed since the Harvard Water Project and the Basin management ideas… On the other hand, the incremental crawling pace while the water is sucked up in options to buy that will never be public – at prices that will never be public – is a sign of the success for some parties and that the rest are playing by rules that hurt them. This was the Poudre Water Sharing Group – and there is no better group able to take this on that I (John Wiener) have seen, though I have seen some as good, since I began observing these issues in 1997. If that did not work, what more do we need to try something new? The problem is not thinking of better ways – it is thinking about how to do the better things without being blocked by gatekeepers whose purposes are very short-term or fearful or both.

Almost anything can be done with land ownership; it is the obsession with incrementalism in water law that defeats taking a serious and thoughtful deal to Water Court and up to the Supreme Court based on a partnership with a good solid base (again, this is impassioned opinion, but I have yet to be disabused on this…) The fundamental step is almost exactly like a lease-back, but it does not end; and therefore, does not prevent long-term planning and financing for transition to sustainable economic viability and provision of wanted conditions.

If "firm supply" for projected population growth can only be "**permanence**", from the municipal provider perspective – "We sell a tap forever!" – then the real question is not what land to dry, here on the other side of the mountain, but what is the best way to **manage the whole picture?** Why are so many other places investing in their watersheds and landscapes? (See Earth Economics and the huge EPA Smart Growth websites for excellent explanations and resources on such investments, such as the 1.4 billion gallons per day system working without a water filtration plant for poor old ignorant New York City.)

The **water community may be the only group** that can pick up the ball and move it… The public is hearing millions of dollars of advertising that denies science, but still a very important study commissioned by the American Water Works Foundation found that water providers are trusted (Raucher et al. 2014 – Presented at the January 2015 Colorado Water Congress). Water providers have been working with foresight and best available science for decades… But, in competition with each other. That has to end: your real clients are not the city council, the loudest shouter at a meeting, or even your own present rate-payers: **your real clients are your grandchildren.**

What about the irrigator's grandchildren? If "I want to preserve the option of the lifestyle and make farming possible for my family, but it's **my 401K** to sell the water" is the issue, then the

agricultural community has to **ask, for real** and for the first time, how do we get past the critical present financial vulnerability of so much of the best remaining farming and farm lands and water, to **long-term economic viability?** How do we make the changes needed? **What do we need to know?**

There are a set of things we need to know about to act effectively, and this is one view of them. If we try to work with only one or two, we may be trying to jump a six-foot ditch one foot at a time! Probably more than half **of US cropland** is owned by "small and medium" farms often at high financial risk. Colorado's future depends on not only a Water Plan but also conservation of capacity to grow. Keeping agricultural water available will not be enough if we lose farms for other reasons.

The bottom line: Landscape-scale diversified agriculture with net profit is necessary to conserve remaining productive capacity, increase resilience to physical and market variability, preserve remaining water quality and ecosystem services (e.g. de-nitrification of agricultural run-off), improve food security and preferences, and conservation of amenity, recreational and real estate values.

WHAT WE NEED TO LEARN MORE ABOUT:

Long-term economics of diversified farming and rotation systems: Converting to different kinds of production has costs, but how long does it take to pay off and begin profits for more complicated rotations, more cover crops, more diversified production and lower-input farming? Not so long ago, farming was much more diversified – almost every farm produced a range of crops and livestock, for use on the farm, feeding the farmers and animals, and some for sale. Resilience to weather and market surprises included more eggs and more baskets! Marketing for local sales has improved dramatically, but we're still losing too many acres and families.

Some information: In the near future, as people take their environment more seriously and the prices of "natural" and "organic" and "local" foods continue to decline relative to conventional supplies, there will be more study of the economics of farming for the long term. Since the Seufert et al. study in 2012, three new important studies have taken us closer to asking the right questions. Crowder and Reganold (2015) found that organic agriculture is globally more profitable in a huge analysis of hundreds of comparisons, despite some yield reductions on a single-crop versus same crop comparison, partly because of the extra prices people are willing to pay and partly because the costs of farming include inputs or avoidance of their purchase. Smith et al. (2014) found that the energy efficiencies are significantly better with a few crop exceptions that depend on a lot of protection (see also Baum et al. 2009). And just out, Pittelkow et al. (2015) found that the yield penalties from conservation agriculture compared to conventional are a few percent, except where the conservation agriculture actually does better.

There are three critical limitations on the comparisons of "alternative" versus "conventional" farming. First, the time dimensions are very poorly controlled and far less studied, with almost no work on long-term soil recovery over time and through climate extremes. (The Dust Bowl included a lot of Colorado; recovery was not quick or complete and may never be… but it was created remarkably quickly by short-term market incentives; a later term would be "fence-row to fence-row!" or "get big or get out" to survive the price squeeze; Worster 1979, Egan 2006).

Seufert et al. 2012 warned against comparing apples and oranges, and Pittelkow et al. 2015 address this, but the basic work has not been done, and we need to be doing it because US research seems disinterested in these fundamental problems which will not produce patents (Welsh et al. 2010, Zadoks and Waibel 2000), though there is serious work in Europe (e.g. Kremen et al. 2012a, 2012b).

Second, there is almost nothing on the real profitability of diverse mixed and integrated farming systems, particularly those designed to work on the landscape scale, producing a resilient and steady flow of a variety of outputs that would seem ironically similar to those of the vast majority of farms before the elimination of labor (jobs) became the golden calf to worship. What knowledge there is seems invisible to "conventional" agriculture (Francis 2010, Tanaka et al. 2008).

And third, there is almost nothing on the long-term economics of investment in transition and careful change with adequate financing. Compare the annual note and the "make it or lose the land" economics which are often blamed for short-term thinking in the less-developed world (e.g. Pittelkow et al. 2015) with the highly-vulnerable small farms in the US being supported by their families from off-farm income or barely getting by on annual notes. Then consider that no water provider operated by professionals would dream of doing without long-term planning and long-term financing.

The agricultural seller facing increasingly volatile input prices and values of her outputs and increasingly dangerous and variable weather is competing with 30-year bonding capacity and a rate-payer and tax base capacity to think ahead. The number of small farms still struggling to stay in business is the great surprise, until you know how much those people want to farm…

The bottom line: Making $50/acre on each of 6 crops with low yields from that acre is better than making $200/acre from one crop on that acre… And making $30 from each of 4 that got through a bad year is a lot better than making $50 from one poor crop while the soil disappears. We need to put the pieces back together and put the landscapes back together…

Long-term Financing: Why is so much of our topsoil and productive capacity subject to annual or short-term planning horizons and short-term pressures for cash profits? Almost every other part of basic infrastructure is financed over the long term, typically 30 years, from home mortgages to water supply construction, to match costs to benefits over the life of things. Why

not think that way about food and all the benefits from farming and ranching and forestry? What about using state and municipal partnerships that use long-term financing and low-cost capital from bonds and revolving fund mechanisms to conserve resources including farm families?

Right-Sizing for Net Profits: If a group of farmers are going to grow a set of crops in rotation, can they right-size capital investments in different kinds of equipment? Working in groups is hard but beats going out of business and it might be a significant savings. Let's start to find out how to do this – local custom operations? Cooperatives? Ditches or districts? Pick one kind of tractor and manage a group of them for longevity and least-cost? Pumps? What else? How often can or should we use this to get best return on investments? Lower cost but higher profit!

Land and Soil Potential: In the long term, we want to be working **with the terrain** and with the ecology for soil conservation, for wind breaks, integrated pest management, drainage and filtration management, and conserving amenities and such benefits as wildlife (and hunting income). There is no doubt in the science that the **landscape scale** works far better for conservation than the rectangular grid. Again, we need to be re-vising our organization to transition toward this, to capture nutrients instead of buying and losing them, and to maximize this-season returns on what we do add in at whatever price we are charged. See Biebighauser 2014 on the amazing extent of drainage and land change before the present binge of tiling set in, and the work of the Agroforestry Research Unit of the USDA, for a start; http://www.usda.gov/wps/portal/usda/usdahome?navid=FOREST_FORESTRY>.) As a small example, filter/buffer areas designed with the land rather than a survey line are (not surprisingly) far more efficient and provide interior spaces with other benefits and potential values (Dosskey et al. 2013, 2012, 2010, 2003, 2002). "Managing Agricultural Landscapes for Environmental Quality" has a great deal more promise than hoping enough fragmented bits and pieces will suffice (Nowak and Schnepf, Eds., 2011, Schnepf and Cox 2007). But, we won't ever get there if we allow the **fragmentation, conversion, and perforation** of agricultural landscapes to continue. Time for the public to be represented with some thoughtful participation in securing what it wants – rather than letting a water broker decide the regional future.

Losing Knowledge We Need: Pressure to reduce labor and jobs has also reduced local knowledge of crafts and the place, and many specialized skills though a huge range are still needed. Diversity lives on in the huge devotion to specialty crops, 4-H and FFA programs, and the marvelous variety one sees at a good county fair, but the business of farming is more like a business than like farming for the long term. We need **integration of alternative and conventional agriculture** experience into forms of information that producers, Extension and advisors are used to using. There are a lot of case studies, but they can be hard to use alone. See the National Research Council, 2010: Toward Sustainable Agricultural Systems for the 21st Century (free; www.nap.edu – enter title sought).

Land, Houses, and Tax Management: Rural residential development that breaks up the landscape and management choices also costs counties typically far more for services than the taxes pay for – we lose all ways. Coupal and Seidl found in 2003 that dispersed rural residential development cost Counties $1.65 for every $1 in taxes paid, but perhaps updating that would be too demoralizing for the state which the Colorado Fiscal Institute (2015) reports as being 49th lowest in taxes, accounting for the stupendous infrastructural and educational shortfalls.

On the bright side, people love being near open space, as well as wanting near-by basics and retail, so there are enormous wasted opportunities for "smart growth" that supports and fits with farming and provides high-quality low-cost efficient housing that benefits buyers and sellers and the tax base. See David Carlson's Agricultural Protective Development Associations – http://aic.ucdavis.edu/research1/Conserv.ag.pdf for a great model. If municipalities were willing to think three feet ahead, they could capitalize on creation of value by establishment of amenities, and employ techniques such as big cities use to finance acquisition of amenities and values and use bonding and taxing, tax increments, etc., to enable foresight to be realized, rather than letting private developers leave the costs and problems behind, when they take the profits. If ditch companies were willing to think ahead, they could be developers and save themselves.

Water Law, Efficiency and Agricultural Stability: Private property rights are the basis for markets and we can increase their value and the values of conserving. **Long-term security** can increase with more support for public benefits that include avoiding risks from expensive and environmentally dangerous thresholds like total maximum daily loads. **Agriculture and urban partnerships** should implement water sharing on a flexible basis using urban financial mechanisms for long-term investments, diversified cropping and securing quality of life. **Keys to efficiency** include making innovation easier with lower costs of trying new ways, lower **transactions costs and less expensive burdens of proof** – such as presumptive figures rather than all new engineering, and reasonable kinds of **reversibility** if we are badly surprised. Stability can't come from forcing or buying enough, but it can come from taking farming in safer directions. For example, rotational fallowing must also accommodate **cover cropping. Diversification** can accommodate fuel crops in the mix, providing safer and cost-controlled city and farm supplies. We must not avoid any possible injury by preventing experiments and innovations – we should protect rights with better mechanisms to provide a remedy, including wet water and financial insurance coverage. The **new technologies** of measuring and following flows are an opportunity we should take. Usable water supplies are not likely to increase.

We will not jump a six-foot ditch one foot at a time… but if we let ourselves try, we can make the leap. The State Water Plan is an important part of building momentum but it won't get us across without the other parts we need. We need progress in all of these parts to build towards a future where our grandchildren will want to and be able to farm. In the old folksy tradition, a

proverb: "If you're winning, you probably like the rules just fine." The grandchildren have not yet voted. Will they want our names?

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III. Stories on Business as Usual – What does this mean for the power of the State Water Plan?

The Denver Post, (Bruce Finley), covered the agreement struck by Denver Water and Grand County, on Fraser River management, on March 6, 2014. This was the day of the Interbasin Compact Committee Summit Meeting in Golden, CO, I believe.

The irony and importance of this is that so far, it is all business as usual on the cutting edge, by parties acting without public discussion, announced on the same day the IBCC and members of the Basin Roundtables from all over Colorado were reaching some conclusions after literally thousands and thousands of hours of volunteer effort starting in 2003 with the creation of the Statewide Water Supply Initiative and years of roundtables that followed.

Talk and discuss, meet and greet, make connections, establish relationships… feel good… but **meanwhile, business goes on** by those working in the market and those able to influence the outcome. The Denver Water – Grand County agreement followed another agreement by Denver Water and Trout Unlimited and others, which was also covered in the Denver Post and in an editorial contribution by James Lochhead and David Nickum.

The point is that no matter how much talk takes up the time, options are not recorded, prices are not recorded, and the big buyers know a lot more than the small sellers. Anti-speculation doctrine has no effect at all because it is so easily end-run privately.

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http://www.denverpost.com/News/Local/ci_25285226/Denver-Water-Grand-County-strike-deal#
accessed May 14, 2014 12:03:11PM MDT

Denver Water, Grand County strike deal on Fraser River
By Bruce Finley The Denver Post The Denver Post
Posted:Thu Mar 06 00:01:00 MST 2014 DenverPost.com

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http://www.denverpost.com/Opinion/ci_23364868/Together-we-can-meet-Colorado-River#

accessed May 14, 2014 11:59:29AM MDT

Together, we can meet Colorado River challenges

Posted:Sat Jun 01 00:01:00 MDT 2013 DenverPost.com

IV. Background on land loss and financial vulnerability n Colorado agriculture:

1. 2012 Census of agriculture data for Colorado:

http://www.agcensus.usda.gov/Publications/2012/Full_Report/Volume_1,_Chapter_1_State_Level/Colorado/

All Colorado data from the 2012 Census of Ag. is available in one pdf, but it is 625 pages:

http://www.agcensus.usda.gov/Publications/2012/Full_Report/Volume_1,_Chapter_1_State_Level/Colorado/cov1.pdf

More than 1/4 of Colorado's irrigated land as of 1997 is gone now! That is 857,448 acres…
To relate to a good earlier publication, compare 2012 to 2002, because there is a fine report on losses up to 2002 (Environment Colorado, 2006).

In 2002, there were 2,590,654 irrigated acres in Colorado; in 2012, despite the ethanol and very high feed prices stimulus to bring new land into production, there were 2,516,785 irrigated acres.

That's a loss of 73,869 acres… but that was before the drought of 2012. Lost acreage from that is hard to estimate, but may result from not only economic stress from 2012 drought (Pritchett et al. 2013) but also causing consolidation of irrigation on less land with more reliable supply, and from the flood damages to irrigation in 2013 (Draft State Water Plan Chapter 5.2 Natural Disaster Management).

Please notice that in the aggregate, the changes in "land in farms" are complicated by three factors or more. First, between 2007 and 2012, there was a major and continuing economic recession/depression, and that affected land conversion rates. Second there was continuing stimulus for new farming with the ethanol explosion in corn use, which stimulated turnover of other land into soy and other feed, as feed prices skyrocketed, changing the cattle business and the farming business. And third, land classified as "in farms" also includes land in small but very rapidly increasing "farms" which are not commercial and not lucrative but hobby, retirement, life-style, "horse properties" and other land in rural residential development.

In Colorado, land in "farms" in aggregate increased between 2007 and 2012 by 281,765 acres, but between 1997 and 2012 there was loss of 463,156 acres despite the rural residential development (USDA 2012 Census of Agriculture – State Data; Colorado, p 7). County-level information is probably more valuable for getting a good picture if one can examine it.

Land in large-lot dispersed rural development has exploded, giving the impression that farming is gaining ground, but it is likely that the vast majority is simply residential in parcels 35 acres and larger so as to be exempt from subdivision regulations and until very recently, qualify for a "well by right" for domestic use water supply.

But the picture for irrigated land is clearer: 857,448 acres were lost from irrigation from perhaps the high in 1997 to 2012 alone… This was before the well shut-downs in the South Platte, at the end of a wet period in Colorado, (Pielke et al. 2005). From 1982 to 2012, Colorado lost 684,157 irrigated acres.

Irrigated Land in Colorado	Acres (USDA 2012 Census of Ag.; CO p 7)
1982	3,200,942
1992	3,169,839
2002	2,590,654
2012	2,516,785

And, the quality of the land is not distinguished (Esseks et al. 2009, Francis et al. 2012).

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2. Financial vulnerability of small agriculture:

The fundamental economic principle supporting private property rights is to provide secutiry of investment. The fundamental failure of security for irrigated agriculture and partner ranching enterprises is in the conflict between the short-term valuations of crops, pasture, range and cattle as production systems versus the short-term valuations of land "development" into additional sprawl. These short-term valuations are subject to change by such drivers as price shocks for fossil fuels on which sprawl is highly dependent, and input prices for very large conventional agriculture, and also changes in the will to protect ecosystem and environmental values. The rate of growth of local food and the preference for local and high quality food is hard to quantify, though USDA reports place it far higher than growth rates for other parts of the agri-business sector.

There are two critical omissions throughout the Colorado Water Plan: the quality of the land which is irrigated and from which water transfers have been and will be made, and the value of the small and few remaining middle-sized operations which are being rapidly bought off the land. The number of very small operations continues to increase, as far-suburb and rural residential land is converted into supposedly-agricultural operations which generate only small fraction of the agricultural net income. The 2014 Family Farm Report notes that for the categories of "retirement", "off-farm income", and "low-sales" the operating profit margins in 2011 were estimated to be Negative 19.4%, Negative 69 percent, and negative 53.4%

Small	Small	Family	Farms		Midsize family farms	Large Scale family farms	Very Large, and Non-family	All farms
			Farming occupa-tion	Farming occupa-tion			(same column to fit page)	
	Retire-ment	Off-farm Occupa-tion	Low sales	Moder-ate sales				
Gross sales (See [yet again] revised typology p 4)	<$350K	<$350K	<$150K	>$150K and <$350K	>$350K and >$1M	>$1M and <$5M	>$5M; no # for non-family	Not relevant
Total #	353,922	909,872	567,214	118,253	123,009	38,541	3,857 plus 58,175	2,172,843
Return on Assets	**-0.6**	**-2.9**	**-2.9**	1.1	4.0	8.6	15.3 -0.2	-1.7
Return on Equity	**-0.7**	**-3.7**	**-3.1**	0.7	3.7	9.2	18.8 -0.4	-2.2
Opera-ting Profit margin	**-19.4**	**-69.0**	**-53.4**	7.1	18.1	24.1	23.8 1.0	-31.2

Hoppe, Robert A. *Structure and Finances of U.S. Farms: Family Farm Report, 2014 Edition*, EIB-132, U.S. Department of Agriculture, Economic Research Service, December 2014. Table 7; p. 36.

PUBLIC INPUT ITEM 134

September 17, 2015

Colorado Water Conservation Board
Mr. James Ecklund, Director
1313 Sherman St.
Denver, CO 80203

RE: Comments on the Second Draft of the Colorado Water Plan

Dear Mr. Ecklund,

The Ferdinand Hayden Chapter of Trout Unlimited appreciates the opportunity to comment on the Colorado Water Plan and submits the following for consideration. The Ferdinand Hayden Chapter is centered in the Roaring Fork Valley, from Aspen to Glenwood Springs and New Castle. We are one of the oldest chapters in Trout Unlimited, being the 8th chapter chartered with nearly 300 members. Our primary concerns deal with the possibility of Trans-Mountain diversions, Stream Management Plans and "streamlining" the approval process.

The Ferdinand Hayden Chapter is strongly opposed to any new trans-mountain diversions. There simply is no water left to take without causing or exacerbating the already severely depleted headwater streams of Colorado's West Slope. The Roaring Fork River is very hard hit already above Aspen by the Twin Lakes diversion, the Fryingpan above Ruedi suffers from dewatering as well. The headwater counties of Grand, Summit, Eagle and Pitkin are all dependent on a recreation and agricultural economy. Taking more water for Front Range growth will only hurt our economy and that of the State.

The Front Range must adopt high levels of conservation and reuse, especially with water already diverted from the West Slope. The cities in the urban corridor need to recognize that this is an arid country and learn to live with that reality. People come to those cities because of the recreational opportunities of the West Slope, from skiing and rafting to fishing. We need to protect what we have left.

The Ferdinand Hayden Chapter also supports the development of Stream Management Plans, both as a means for learning more about what our rivers need to stay healthy or recover and as a means for potentially providing for those needs. We need both knowledge and solutions, especially for rivers like the Crystal. We also need to develop both legal means and incentives for ranchers to increase efficiency and keep more water in the rivers. The Crystal suffers in dry years from an antiquated system, with a stretch south of Carbondale that can dry up nearly completely. We need to protect and maintain our agriculture, but we also need to protect and restore our rivers.

We are also concerned with streamlining the approval and permitting process. Frontloading the process is a good idea, and there is plenty of room for improvement, but any streamlining

must not come at the expense of a full evaluation of impacts. It must also maintain a full level of public participation.

We also think that the State should be careful with any project endorsement. It should only occur with full agreement among all stakeholders, including groups like TU, and only after, not before, a final EIS is issued.

Water is a finite resource and we are now asking far more from our rivers than we expected of them 100 years ago. Climate change is likely to make the situation for our rivers worse.

Thank you for the opportunity to comment.

The Ferdinand Hayden Chapter of Trout Unlimited (008)

Richard Van Gytenbeek, Colorado River Basin Outreach Coordinator, Colorado Water Project

September 17, 2015

Colorado Water Conservation Board
1313 Sherman Street, Suite 721
Denver, Colorado 80202

Re: Colorado's Water Plan

Dear Board Members,

Thank you for the opportunity to provide input on Colorado's Water Plan. On behalf of Trout Unlimited ("TU"), the undersigned are submitting these comments on the most recent draft of the plan, with suggestions for changes to the final plan, which is due to the governor by the end of this year. We are grateful that the Colorado Water Conservation Board ("CWCB") has been open to public input throughout the water planning process.

Trout Unlimited is a non-profit cold water fisheries conservation organization. In Colorado, TU has twenty-four chapters located throughout the state's major river basins (see list, pg. 10) and 10,921 members. Given our mission of conserving and restoring cold water fisheries habitat, we are extremely interested in the choices Colorado makes regarding management of its water resources.

Overriding Principles

As you recall, in May of this year, TU submitted comments urging that the water plan do three things. As stated in our May letter, those three principles are:

1. The Colorado Water Plan should support innovative water management techniques and irrigation infrastructure upgrades that improve agricultural operations and increase river flows;

2. The Colorado Water Plan should provide funding to ensure that each basin roundtable adopts a stream management plan (SMP) and implements projects to meet gaps identified through the SMPs; and

3. Consistent with the "Conceptual Framework," the Colorado Water Plan should reject all new trans-mountain diversions (TMDs) unless the project proponent (a) is employing high levels of conservation; (b) demonstrates that water is available for the project; and (c) makes commitments that guarantee against environmental or economic harm to the basin of origin.

TU wishes to commend the draft water plan that you released in July on all three counts.

Innovative Water Management and Irrigation Infrastructure Upgrades

On our first principle, TU is pleased that the draft water plan calls for significant funding for agricultural conservation and efficiency projects. Agriculture is a pillar of Colorado's economy. It is the backbone of rural Colorado, and it provides valuable open space. Across Colorado, TU is partnering with agricultural groups on cooperative projects that help farmers and ranchers stay productive while also improving conditions for fish and wildlife.

In Section 6.5 of the July draft, the plan calls for updating and improving the state's aging irrigation infrastructure , "especially where there can be a large effect on or benefits to other sectors." Based on our project experience from across Colorado, TU knows firsthand that updating and improving irrigation infrastructure has significant benefits not only to the agricultural sector, but also to recreation and the environment. In fact, building cooperative, mutually beneficial projects with agricultural producers is one of TU's primary focuses in Colorado. The link between agriculture and conservation is long-standing, and the opportunity for win-win partnerships between farmers and ranchers and conservationists is significant.

For many of our infrastructure improvement projects, TU has received state funding, through the Water Supply Reserve Account, the Colorado Healthy Rivers Fund or otherwise. As irrigation infrastructure continues to age and the availability of water resources becomes more limited, it will be increasingly important that Colorado provide additional funding for projects that benefit agriculture and conservation simultaneously. TU is pleased to see the discussion in the draft plan of funding for these projects, and we encourage you develop this concept further in the final plan and during plan implementation.

In addition to state funding for irrigation improvement projects, the water plan should explore policy mechanisms to encourage infrastructure modernization. One example is the water efficiency savings concept that was the subject of legislation during the 2013, 2014 and 2015 legislative sessions. Water rights are valuable property interests, and TU strongly believes that agricultural producers who use their water rights to improve stream flows should be compensated for doing so. The law allows for such compensation with respect to the historical consumptive use portion of a water right, but not for historical return flow. The water efficiency savings concept would create a mechanism to compensate producers for committing historical return flow to stream flow improvement by modernizing their irrigation systems. The CWCB should pursue this concept, as well as others, in the final plan and during plan implementation.

Stream Management Plans

On our second principle, TU is grateful that the draft water plan calls for stream management plans ("SMPs") to assess the health of our rivers and provide better information on the flows required

for environmental and recreational water uses. While we know that healthy rivers and streams are critical for Colorado's quality of life and our multi-billion dollar outdoor recreation economy, we have a limited understanding of the flows required to maintain and improve the environment that support these assets. SMPs will be important for helping to backfill this knowledge gap.

The fundamental purpose of an SMP is to define healthy flow regimes for the environment and recreation. In water short basins, these flow targets may be perceived as competing with established consumptive uses. To address this misperception, we believe that SMPs should be developed through a collaborative process between consumptive and non-consumptive water users, with the purpose of protecting and improving their common water resource. The final water plan could emphasize this point.

The overlap between consumptive and non-consumptive water uses is apparent in Sections 6.5 and 6.6 of the draft plan. Sections 6.5 and 6.6 of the draft plan identify specific "actions" to facilitate consumptive and non-consumptive projects and methods, respectively. While there are some distinctly different actions among the two lists, there are far more similarities. These similar actions could be the basis of an SMP that addresses both consumptive and non-consumptive water uses. Including these common actions under basin-wide SMPs could help integrate consumptive and non-consumptive projects and methods and further improve comprehensive water management.

TU applauds CWCB's quick establishment of initial funding for SMPs through the 2015 projects bill. However, the $1 million currently earmarked for the first year will not be sufficient for these important plans in coming years. The final water plan should call for increased funding, and we encourage you to plan for additional appropriations in future years.

Of course, as SMPs are completed, it is critical that CWCB provide a mechanism to implement the plans' recommendations. The draft plan acknowledges that protecting and restoring the health of our rivers and streams will require an estimated $2 billion - $3 billion, and the plan proposes several mechanisms for generating those dollars. TU looks forward to helping to implement those ideas in the near future.

Trans-mountain Diversions

As Colorado's population grows, the choices we make regarding provision of water to municipal areas become increasing important. Currently, Colorado diverts approximately 600,000 acre-feet of water annually from the West Slope to population centers on the Front Range. These trans-mountain diversions (TMD's) of water can cause severe economic and environmental damage to the areas of origin. TU strongly believes, therefore, that the CWCB should reject all new TMD's unless the project proponent (a) is employing high levels of conservation; (b) demonstrates that water is available for the project; and (c) makes commitments that guarantee against environmental or economic harm to the basin of origin.

We believe that the "conceptual framework" is a fair starting point for evaluating TMD's. As you know, the Inter-Basin Compact Committee ("IBCC") unanimously adopted the conceptual framework and forwarded it to the CWCB for inclusion in the final water plan. We endorse the inclusion of the conceptual framework in the plan.

Further, we support the IBCC's role in continuing discussion of the conceptual framework and other issues of interest to the roundtables. The IBCC provides a forum where roundtables, East and West Slopes, and other interests are represented and can engage in constructive discussion and problem-solving. The IBCC preserves the grass-roots nature of the Colorado Water Plan effort.

State Endorsement of Projects

In addition to the conceptual framework for addressing trans-mountain diversion projects, the draft plan includes a separate conceptual framework for obtaining state endorsement of a project (Figure 9.4-1) and proposes a series of "lean events" involving agencies and stakeholders to flesh out its components. TU strongly supports conducting these lean events as much more detail and discussion will be needed to achieve any level of consensus on this very important and potentially divisive aspect of the water plan.

The concept of state endorsement of projects raises a number of questions, including:

1. What does "state endorsement" mean? Does it include funding of the project? What additional criteria should be required for state funding?

2. Does the state contemplate endorsement of new TMDs? Shouldn't endorsement of a new TMD be contingent on the outcome of the TMD conceptual framework discussions?

The factors to be considered for state endorsement need to be better fleshed out, and they need to be respectful of the fact that a project deemed necessary to meet the goals of one basin implementation plan ("BIP") may be inconsistent with the goals expressed in another BIP. The proposed "lean events" can help answer these questions and develop needed detail.

From TU's perspective, the key factors for state endorsement are:

1. The project is deemed necessary to meet a gap even after high levels of conservation, as defined in SWSI 2010, and maximum reuse are projected to be achieved.

2. The project does not result in economic or environmental damage.

3. Where feasible, the project is multi-purpose, including identified environmental water needs.

4. The project proponent can show extensive stakeholder involvement in the crafting of measures to prevent economic or environmental impacts.

In all cases, the process to obtain state endorsement must be transparent and involve key stakeholders. The more the process relies on closed door agency meetings that exclude key stakeholders, the less legitimate the finding of state endorsement will be and the more likely to be challenged as pre-decisional.

Project Streamlining

The draft plan sets forth some reasonable ideas for streamlining the permitting process for new water projects, particularly when those projects meet the factors for state support. TU supports the concept as it would save time and money for project proponents and other stakeholders. However, streamlining steps should encourage earlier, better informed decisions, not premature, political ones.

Accordingly, TU supports early involvement of both state agencies and stakeholders in the development of technical information needed to adequately evaluate the impacts of the proposed project and to develop measures to prevent those impacts. But we oppose the state's endorsement of a project, be it through the 401 certification process or the 122.2 process, before the completion of a final environmental impact statement ("EIS") and the opportunity for the public to weigh in on the state's proposed endorsement of the project.

We realize that state endorsement of a project based on a draft EIS would allow the state to apply political pressure to the federal agencies to accelerate their permitting processes. However, we question the effectiveness of that approach particularly in light of its high cost, which is to undermine the legitimacy of the state permitting process. Other means to encourage earlier federal decision-making process should be explored. One such avenue is the development of MOUs. Another avenue is the development of consensus on methodologies to be used to address elements that are common to all water projects, such as hydrology, stream temperature modeling, etc.

TU urges the CWCB to use the "lean events" as a means to further explore these and other avenues to expedite federal and state decision-making without sacrificing sound scientific principles or the sanctity of the public process.

Water Conservation

Water is a precious and scarce resource in Colorado, and we agree with Governor Hickenlooper when he says that "every conversation about water should start with conservation." Water conservation is the single most important strategy in meeting the future water needs of Colorado's growing cities. Its advantages are clear: it is cheaper and faster than other options, its

implementation is more scalable and flexible, and it protects key Colorado values by reducing the pressure to draw even more water from irrigated agriculture and our rivers.

The 400,000 acre-foot water urban conservation goal included in the plan sends a strong and positive signal about the importance of water efficiency. It is disconcerting, however, that this "stretch goal" contemplates a level of water savings less than the "high conservation" scenario analyzed in the Statewide Water Supply Initiative ("SWSI"), which contemplates savings of 460,000 acre-feet by 2050.

Polling of Colorado voters shows that our citizens want to see aggressive conservation. Seventy-eight percent of voters prefer solving our water challenges using water conservation and recycling instead of diverting water from rivers in western Colorado to the Front Range, and 88% of voters support a statewide goal of reducing urban per capita use 10 percent by 2020 (a level similar to SWSI's "high" scenario).[1] Basin roundtables for the Colorado, Southwest, and Gunnison basins have all supported a "high" conservation goal statewide. Moreover, the goal is not unrealistic – it is roughly 1% per year reduction in per capita water use, a rate that has been more than doubled by water utilities over the past decade.

We support the water conservation elements included in the Critical Action Plan of Chapter 10. The actions outlined under III.a will help achieve the stretch goal, and in particular III.a.1 – calling for integrated water resource planning with water conservation best practices incorporated – should be the norm for water utility planning statewide. We are also supportive of the proposals for expanding the CWCB's loan program to include conservation actions (I.a.1), as well as tax credits for water-efficient landscapes and irrigation (I.c.7) given the significant proportion of municipal water use that is used outdoors for landscape irrigation.

In short, we are pleased to see the Colorado Water Plan include a stretch goal, but recommend that it be increased to 460,000 acre-feet consistent with SWSI "high" conservation levels rather than being scaled back. A stretch goal, by its very definition, should be aggressive and go beyond what we know we can do using the types of strategies already in place. The poet and writer T.S. Eliot said it well: "Only those who will risk going too far can possibly find out how far one can go." Colorado needs to be aggressive and discover how far we truly can go in water efficiency. If we set our goals for conservation lower, it is all too likely that what we achieve in conservation indeed will be lower.

Water Quality

TU commends the CWCB for the improvements in the water quality sections of the draft CWP. In particular, TU appreciates the inclusion of a strong water quality goal and the outline of

[1] Keating and Weigel. 2014. *Colorado Statewide Water Poll Key Findings*. Poll conducted September 5-8. www.waterforcolorado.org/resources.

steps to achieve it. We also appreciate the acknowledgment of gaps in our information about water quality and proposed assistance to the Basin Roundtables to identify water quality needs within the basins. Finally, we appreciate the acknowledgment of the fact that water diversions can have a significant impact on water quality.

However, TU is very concerned with the addition of the following critical action item pertaining to water quality standards included in Chapter 10 of the draft CWP:

> Work with regulators to modify existing water quality standards to factor in climate change. (*Item 4, Section VI.e, Chapter 10)*

This recommendation is not included in and does not flow from the water quality discussion and recommendations included in the draft CWP and no explanation appears to be given for its inclusion in Chapter 10.

That climate change will pose challenges to Colorado's water future is well recognized. However, downgrading water quality standards to accommodate degradation of water quality due to climate change is not the solution. It is bad policy and it is inconsistent with both the federal and state water quality laws and the Governor's Executive Order creating the CWP.

Balancing Federal and State Roles in Water

Throughout the draft plan, there is a strong emphasis on building a spirit of cooperation, respectful dialogue, and collaboration to help bridge some of the many divides that sometimes arise in Colorado water. In addressing Colorado's engagement with federal authorities, we recommend a similar spirit be brought to bear.

In Chapter 9.1, while the plan does recognize "that federal agencies have a role in the management of federal lands and water resources within the state," the main focus of proposed state action is in providing a check on that federal role, on preventing interference with state water rights. In specific, the plan notes state objection to "federal assertions of authority to mandate bypass flows as a resource management tool." We recognize that the state has in the past disputed federal bypass flow authority, but we respectfully disagree. We believe that federal authority to require bypass flows is quite clear, and it has been upheld in federal court. Moreover, we believe bypass flows can be a useful tool for providing resource protection as required under federal law while allowing for water development activity on federal public lands; if federal agencies cannot condition permits so as to meet their resource protection obligations, that leaves only the much less desirable option of simply rejecting such permits.

Nonetheless, we believe the best course for addressing this contentious issue is to bring that spirit of cooperation, respectful dialogue, and collaboration to state/federal interactions on water. We therefore recommend that the Colorado Water Plan add language highlighting the positive role of the state in promoting such cooperation. Rather than a negative focus on limiting federal use of their authority, (e.g., "the State has had to grapple with federal assertions") the plan should highlight a more positive approach to helping federal agencies achieve their resource protection responsibilities through collaboration with the state. For example, we encourage efforts to make the CWCB's instream flow program an effective alternative for federal resource protection responsibilities – including looking at new and creative ways in which that program can be used where needed to address those federal requirements. The plan appropriately references negotiated efforts to develop state-based alternatives for Wild and Scenic Rivers designations and the Upper Colorado River Endangered Fish Recovery Program; the state should extend a similar commitment to partnering with federal land agencies in addressing their other responsibilities under statutes including the Federal Land Policy and Management Act.

In summary, while we do not object to the plan's general suggestion of "ensuring that the federal and state roles in water management remain appropriately balanced," we encourage a more positive tone that encourages collaboration with federal agencies to enhance their ability to partner with the state in achieving natural resource protection. The policies and actions that flow from the plan should focus on proactive collaboration. We believe far more can be accomplished by working together with respect for the responsibilities of both state and federal agencies than through continued battles over competing claims of jurisdiction.

Integrating Land Use and Water Planning.

Too often in Colorado, land use planning and water planning have existed in separate silos without recognition of the clear connection between the two. We support the Colorado Water Plan's effort to begin strengthening this connection, as expressed under III.c in the Critical Action Plan of Chapter 10:

> Integrate Land Use and Water Planning: Initiate the use of local land use tools, where appropriate, to reduce water demands for municipalities, and the need to urbanize agricultural lands.

We similarly support the actions highlighted as items 1-3, to encourage training and best management practices, to incorporate land use planning into water conservation plans, and to begin tackling barriers in state law to gray water use, green buildings and green infrastructure.

We believe the Colorado Water Plan should go further, however. Just as land use needs to be factored into water conservation planning, so too must water use be factored into land use planning. It is vital that the state – the CWCB working with the Department of Local Affairs and, if legislation

is needed, the General Assembly – effectively get water planning considerations incorporated into land use planning at the local level, while leaving flexibility for local jurisdictions to address water needs in a manner that is appropriate to their local conditions. In other words, the state should be more active in setting standards for what must be accomplished in bringing water use into land use planning, while allowing local communities to define their own vision for how that is best accomplished.

Conclusion

On behalf of the Directors and Staff of TU here in Colorado we would like to thank you for considering these comments. Some of our local chapters have also provided additional basin specific comments which are attached to this letter. We look forward to reviewing the final draft of the plan and to working with the CWCB towards plan implementation.

Sincerely,

Richard Van Gytenbeek

Richard Van Gytenbeek
Colorado River Basin Outreach Coordinator
Trout Unlimited Colorado Water Project

Stephanie Scott

Stephanie Scott
CTU Outreach Coordinator
Colorado Trout Unlimited

Colorado TU chapters.

Metro/South Platte Basins:

- Alpine Anglers Chapter
- Boulder Flycasters Chapter (see attached letter)
- Cherry Creek Chapter
- Cutthroat Chapter
- Denver Trout Unlimited Chapter
- Evergreen Chapter
- Rocky Mountain Flycasters Chapter (see attached letter)
- Saint Vrain Anglers Chapter (see attached letter)
- West Denver Chapter (see attached letter)

Arkansas Basin:

- Cheyenne Mountain Chapter
- Collegiate Peaks Chapter
- Purgatoire River Anglers Chapter
- Southern Colorado Greenback Chapter (see attached letter)

Rio Grande Basin:

- San Luis Valley Chapter

Yampa/White Basin:

- Yampa Valley Fly Fishers Chapter

Colorado Basin:

- Colorado River Headwaters Chapter
- Eagle Valley Chapter
- Ferdinand-Hayden Chapter (see attached letter)
- Gore Range Anglers Chapter
- Grand Valley Anglers Chapter (see attached letter)

Gunnison Basin:

- Gunnison Angling Society Chapter (see attached letter)
- Gunnison Gorge Anglers Chapter (see attached letter)

Southwest Basin:

- Dolores River Anglers
- Five Rivers Chapter

Gunnison Angling Society

August 27, 2015

Colorado Water Conservation Board Members
c/o Director James Eklund
1313 Sherman Street, Room 718
Denver, Colorado 80203

Re: Trout Unlimited's Gunnison Angling Society Comments on Colorado Water

Dear Colorado Water Conservation Board Members,

The Gunnison Angling Society (GAS) is a chapter of Colorado Trout Unlimited and represents members in the Upper Gunnison Basin. GAS is excited to provide continuing input on the Colorado Water Plan (CWP).

Trout Unlimited has prioritized three principles that are critical to planning Colorado's water future. GAS agrees with these principles and has provided explanation of why each principle will is important to us at a local level.

Principle #1: The Colorado Water Plan should support innovative water management techniques and irrigation infrastructure upgrades that improve agricultural operations and increase river flows.

The two industries that drive the economy in the Upper Gunnison Basin are agriculture and tourism/recreation. Both industries depend on healthy flows in our creeks and streams. The following are examples of how innovative water management techniques in the Upper Gunnison Basin will protect our community's agricultural heritage and tourism and recreation industry.

- Updating existing cross channel diversion structures on the main stem of the Gunnison and the its tributaries with design's that are safe for recreational water users, allow for fish passage, and account for stream erosion/deposition issues that are caused by channel disturbance and reconfiguration. Oversight, public notification, and guidance as to best management practices for diversion designing and construction will maximize beneficial use of the water available, reduce conflict, user hazard, and ensure the Gunnison area continues to be an attractive destination for visitors and residents in the future.
- Tributaries like Ohio Creek, East River, Tomichi Creek, Cochatopa Creek, and Cebolla Creek have very little storage and experience instream shortages. Updating aging irrigation infrastructure and water use efficiency on these tributaries will allow what water is available to go further. These improvements combined with planning/coordination between users can improve stream flows and reduce shortages.
- GAS supports the two infrastructure planning projects on the Gunnison BIP (listed below). These clearly will provide understanding where infrastructure improvements will be beneficial for irrigators. We see these projects also as an excellent opportunity to understand where upgrades or alternatives to existing irrigation systems can benefit the

health of the watershed as a whole. These projects are also an essential component of Stream Management Plans as they will increase our ability to beneficially manage water for consumptive and non-consumptive uses within sub-basins such as Ohio Creek, East River, Tomichi Creek, etc.

1. **Inventory of Irrigation Infrastructure Improvement Needs - District 28:** Systematically examine and prioritize projects to restore, maintain, or modernize significant agricultural water supply infrastructure.

21. Inventory of Irrigation Infrastructure Improvement Needs – District 59: Systematically examine and prioritize projects to restore, maintain, or modernize significant agricultural water supply infrastructure

<u>Principle #2:</u> The Colorado Water Plan should provide funding to ensure that each basin roundtable adopts a stream management plan (SMP) and implements projects to meet gaps identified through the SMPs.

Many Upper Gunnison property owners are interested in protecting historic agriculture water use while also sustaining healthy and productive fisheries. Because each tributary is managed differently, SMP's should be developed from the ground up by stakeholders and property owners within each sub basin. Examples of planning efforts that would benefit from additional funding and support are:

- The Healthy Headwaters Assessment for the East River- Planning effort to identity environmental and recreation needs, shortages, and opportunities for collaborative projects. (Additions Briant?)
- Ohio Creek Stream Management Plan- Stakeholders coming to the table to plan and develop water management strategies addressing specific water use needs of that sub-basin.
- Tomichi- CCALT and COL planning to work with Tomichi Creek property owners where conservation easements are held to improve riparian health.
- Gunnison River- With continued increase in use on the Gunnison River by rafters and fishermen boat launches at North Bridge, Almont, and McCabes have become heavily impacted. Planning and updating recreational facilities to reduce congestion and resource damage in these high use areas is will need to be incorporated into future management planning for the Gunnison River.

GAS supports the following projects listed in the Gunnison BIP. In concert with the irrigation inventories previously mentioned these projects can also be implemented as part of a SMP for the respective basin or tributary.

30. Nonconsumptive Project Identification and Inventory - Upper Gunnison Region

23. Water Conservation Planning Process for the Upper Gunnison Basin: Enable communities of the Upper Gunnison Basin to reduce municipal and industrial water consumption by 20 percent by 2030

27. Nonconsumptive Project Identification and Inventory - Lake Fork Region: Investigate feasibility of specific project implementation in nonconsumptive focus segments

<u>Principle #3:</u> Consistent with the "Conceptual Framework," the Colorado Water Plan should reject all new trans-basin diversions (TBDs) unless the project proponent (1) is employing high levels of conservation; (2) demonstrates that water is available for the project; and (3) makes commitments that guarantee against environmental or economic harm to the basin of origin.

Like mentioned above, the two industries that sustain the economy in the Upper Gunnison Basin are agriculture and tourism/recreation. Both industries depend on healthy flows in our creeks and streams. Taking water from our basin could be devastating to our community and put water users across the western slope at increased risk. There are water shortages experienced on many tributaries in the Upper Gunnison Basin and in the Colorado system as a whole. While we support cooperation, the points listed in the IBCC-Conceptual Framework must be strictly adhered to and observed. If they are genuinely respected, we do not believe that a future TMD is an option that will not have detrimental environmental and economic consequences for western Colorado.

Sincerely,

Chris Matison

Chris Matison
President Gunnison Angling Society
chrismpcinc@msn.com

Grand Valley Anglers

September 14, 2015

Colorado Water Conservation Board
1313 Sherman Street, Suite 721
Denver, Colorado 80202

Re: Comments on Final Draft of Colorado Water Plan

Dear Board Members,

As dedicated conservationists, passionate anglers, and proud Coloradoans, the Grand Valley Chapter of Trout Unlimited (TU) here in Grand Junction is dedicated to maintaining healthy coldwater ecosystems and protecting the fish that inhabit them. This relies foremost on the water which flows in our streams and rivers and is dependent on both amount and quality. Although we recognize that the plan as developed has taken great strides in offering protection and improvement of our aquatic systems here in Colorado, and we applaud CWCB for hearing and incorporating many essential recommendations from TU and citizens alike, we have a few more issues that we would like to see more appropriately addressed in the final Colorado Water Plan (CWP).

The CWP should support innovative water management techniques and irrigation infrastructure upgrades that improve agricultural operations and increase river flows. A focused analysis of agricultural water use, surplus, and dependency to determine how best to implement these innovative water savings should also be included in the CWP, as well as a reasonable proposal to approach the Colorado legislature with these results to alter future water law in support of creative solutions.

Grand Valley Anglers, being on the West Slope, takes CTU's stance on trans-basin diversions (TBDs) a bit further and believes that all TBDs should be rejected outright. Enough water is already completely removed from the system, often leaving dry streambeds with no hope for surviving fish populations, and removal of additional water could be detrimental to sustainable aquatic ecosystems in the future.

The CWP should provide funding and long-term funding sources to ensure that each basin roundtable adopts a stream management plan (SMP) and implements projects to meet gaps identified through the SMPs. Additionally, monies need to be identified and secured to fund any current or future mitigation associated with water projects in perpetuity.

Thank you for providing an opportunity to comment on this important planning and guidance document as it is being developed. We truly hope that you take the environment, its inhabitants, and its many supporters into consideration as you finalize the CWP. Colorado has a unique opportunity to rescind some of the past mistakes concerning water utilization and cultivate a new paradigm for beneficial water management in the West. Please thoughtfully consider the comments contained herein as you finalize the Colorado Water Plan for the future sustainability of a healthy Colorado.

Respectfully,

Ben Bloodworth, Vice President
For Bill Fenstermaker, President

September 17, 2015

Colorado Water Conservation Board
1313 Sherman Street, Suite 721
Denver, Colorado 80202

Re: Colorado's Water Plan

Dear Chairwoman Hoppe and Members of the CWCB Board,

Thank you for the opportunity to provide comments to second draft of the State Water Plan. Protecting our valuable water resources and the many benefits they provide is a valuable and important endeavor we commend you on the efforts thus far.

The non-profit volunteer led organization of Trout Unlimited along with its Gunnison Gorge Anglers chapter are dedicated to conserving cold water fisheries within Colorado and would like to take this opportunity to provide comments to the State about the Water Plan specific to the Gunnison Basin.

As stated in the Colorado Water Plan addressing increasing demands and variable if not decreasing water supplies will be the key to a successful water future for the State. In the Gunnison Basin, water users and concerned entities including the Gunnison Basin Roundtable have expressed concern about water availability for agriculture and have provided a considerable list of projects aimed at addressing demands for that sector. Addressing agricultural and other demands can and should provide opportunities for the State and project proponents to create "win-win" projects that address changing needs of agriculture while improving stream flow and habitat in our rivers and streams. Recently the CWCB and others have participated in and funded Trout Unlimited supported projects like the No-Chico Brush Project and the Relief Ditch Diversion Modification Project that should stand as examples of agricultural interests collaborating with conservation groups to address habitat and agricultural water needs by modifying agriculture water infrastructure. We commend the State for recognizing multi-benefit projects and processes in the Water Plan and believe that the continued use and promotion of conservation tools such as efficiency, demand management, and comprehensive planning will result in benefits for consumptive and non-consumptive water users.

As stated in section 6.6 of the Water Plan, the Instream Flow Program is a valuable tool used to protect minimum stream flows within the State. We encourage the State to continue to use this program and to build upon it by protecting existing instream flow rights with additional measurements stations and by promoting projects that have the ability to improve instream flow. In addition we encourage the State, through the Water Plan and other efforts, to create incentives for water users to improve control and efficiency of water infrastructure to improve streamflow.

We all need to address the fact that preparing for an uncertain water future while addressing current and future water demands will require the application of creativity and tools that can address the many concerns of the greater water community. Trout Unlimited encourages the State and the final Water Plan to address this reality through the use of Stream Management Plans (SMP). Trout Unlimited believes that SMP can provide necessary flexibility and collaborative framework which can apply the best water management tools in the right areas to achieve the best use of water possible; thereby supporting consumptive needs along with healthy streamflow and economic sectors that rely on healthy flows.

Thank you for considering our comments and for the continued efforts on the Colorado Water Plan. We look forward to reading the final draft and working with the CWCB on future conservation projects in the Gunnison Basin.

Sincerely,

Edward J. Kehoe
President
Gunnison Gorge Anglers

TROUT UNLIMITED Chapter 010
www.rockymtnflycasters.org

September 17, 2015

Colorado Water Conservation Board Members
1313 Sherman Street, Room 718
Denver, Colorado 80203

Re: Comments on Second Draft of Colorado Water Plan

Dear Colorado Water Conservation Board Members,

Rocky Mountain Flycasters (RMF) is a local chapter of Trout Unlimited whose more than 800 members reside primarily within the Big Thompson River and the Cache la Poudre River watersheds in the South Platte Basin.

RMF hereby endorses the concurrently submitted comments of Trout Unlimited regarding the Draft Colorado Water Plan.

RMF offers the following additional comments.

1. Inclusion of Colorado Water Law Topics in the Colorado Water Plan

While RMF's day-to-day activities are focused on the environments of our local watersheds, we sometimes find ourselves in need of a less-than-professional, but working, knowledge of Colorado's water laws and regulations. We have observed that the Second Draft of the Colorado Water Plan includes a comprehensive history of Colorado's water laws and related water management regulations. Access to that information heretofore required research of many sources to attain an adequate layman's understanding of the complexity of the laws, compacts, and rules that are the foundations of Colorado's future water plans and policies. RMF is grateful for the inclusion of this information in the Colorado Water Plan and expects it will also be of value to other non-profit conservation groups such as other TU chapters in Colorado.

2. Simplification of Water Project Permitting Process

Section 9.4 of the Draft Colorado Water Plan suggests several ways to simplify and improve the efficiency of the permitting processes for water projects, particularly with regard to the State of Colorado processes.

RMF has both observed, and participated in, these procedures and particularly with the Federal 404 permitting process. The Colorado process, as described on page 369 of the Second Draft, seems to have a different set of standards for obtaining a Colorado permit. In the Federal process, the proponent submits alternative ways for a project to meet the identified needs. One of the submitted alternatives is usually identified as the proponent's preferred alternative. But the proponent's preferred alternative is not necessarily the alternative that is best qualified for the Federal 404 permit. The Clean Water Act requires the Federal 404 permit to be awarded to the one, among all practicable alternatives, that would produce the least environmental damage. That requires a comparative analysis of all

proposed alternatives to determine which one would result in the least environmental damage.
The Colorado permitting process has different criteria for deciding which alternative is to be permitted. With the current Colorado criteria there is no requirement for a comparative analysis of environmental damage. This difference sets up the potential for conflicts between the Federal and the Colorado permitting decisions. That conflict introduces delays in the permitting process while differences in conclusions are resolved on a case-by-case basis. That situation could be averted if the Federal and the Colorado decision criteria were identical, in which case a single-thread coordinated permitting process would expedite the processing of water project permits.

Figure 9.4-2 on page 370 of the Plan has a flow chart comparing the current permitting processes and a proposed water project permitting process. Under the "Proposed" side of the flow chart, there is a green ovoid labeled:
"DEIS must:
(1) Identify preferred alternative
(2) Detail mitigation and enhancements for water quality"

In accord with the suggestions in preceding paragraphs, the statements in the green ovoid would be revised to read:
"(1) Identify preferred and other practicable alternatives
(2) Detail mitigations for each alternative
(3) Compare environmental impacts of each alternative
(4) Least environment-damaging is input to DEIS"

3. Tracking of Environmental and Recreational Water Projects
Section 6.6 of the Second Draft of Colorado Water Plan has provisions for identifying and tracking the progress of Environmental and Recreational Water Projects. Appendix D of the South Platte BIP has tables identifying specific projects. Looking only at the entries for projects in the Big Thompson and the Cache la Poudre focus areas, there are 20 projects listed. But 14 of those were reported in 2010 as already completed. Whatever newer projects exist in this category are not identified.

It is common knowledge there are restoration projects in progress within both the Big Thompson and Poudre watersheds. They stem from the High Park Fire in 2012 and the Front Range floods in 2013. Those projects would seem to fit within the Environmental and Recreational Water Project category.

With those circumstances in mind, it seems that the final Colorado Water Plan would benefit from a more agile tracking and reporting system for this class of water projects.

In closing, thank you for the opportunity to present these comments for your consideration.

Wil Huett, Board President
Rocky Mountain Flycasters
huettwil@comcast.net
970-232-9833

Saint Vrain Anglers Trout Unlimited

SVATU

September 17, 2015

Colorado Water Conservation Board
1313 Sherman Street, Suite 721
Denver, Colorado 80202

Re: Colorado's Water Plan

Dear Board Members,

Thank you for the opportunity to provide input on Colorado's Water Plan. We are grateful that the Colorado Water Conservation Board ("CWCB") has been open to public input throughout the water planning process. Water is at the crux of so many issues for the future of our state. It's critical that all citizens work as partners to plan our future water uses. As one of the 23 local chapters representing Trout Unlimited ("TU") in the state of Colorado, we are writing to endorse the comments submitted by the state council, Colorado Trout Unlimited (CTU).

We strongly support the overriding principles of: Innovative water management techniques and irrigation infrastructure upgrades that improve agricultural operations and increase river flows; funding to ensure that each basin roundtable adopts a stream management plan (SMP) and implements projects to meet gaps identified through the SMPs; and the rejection of all new trans-basin diversions (TBDs) unless the project proponent (a) is employing high levels of conservation; (b) demonstrates that water is available for the project; and (c) makes commitments that guarantee against environmental or economic harm to the basin of origin.

As a Front Range chapter sitting within a highly agricultural area, we are sensitive to the volume of water that comes into our drainage from the trans-basin diversions and the balances that must ultimately be achieved to preserve our heritage. Parallel to these considerations, water conservation as a lifestyle is an important piece of the strategy to respond to the demands of a growing population in our area. We believe that water conservation goals should exceed the "high conservation" scenario analyzed in the Statewide Water Supply Initiative ("SWSI"), which contemplates savings of 460,000 acre-feet by 2050.

CTU's comments make a number of suggestions that build and expand upon strategies outlined in the Colorado Water Plan. We'd like to echo the comments regarding the integration of land use and water planning, and encourage that the Colorado Water Plan incorporate a vision for water use to be factored into land use planning as well as land use needs to be factored into water conservation planning.

Finally, as representative of the St. Vrain Creek Watershed, we would like to emphasize how important continuing funding for recovery projects following the 2013 floods are to our basin's future ability to manage water resources. The damages to infrastructure, property, and environment will ultimately take decades to address. It is essential that communities and the

greater citizenry they represent have the state's continuing support to enter our new water future with greater sustainability and resilience.

We thank you, again, for considering and incorporating Colorado Trout Unlimited's comments. We look forward to reviewing the final draft of the plan and to working with the CWCB towards plan implementation.

Sincerely,

Erik Wilkinson
President
St. Vrain Anglers Chapter Trout Unlimited

Barbara Luneau
Conservation Chair
St. Vrain Anglers Chapter Trout Unlimited

cc. David Nickum

Boulder
FLYCASTERS

September 16, 2015

Colorado Water Conservation Board
1313 Sherman St., Room 721
Denver, CO 80203

Dear Board Members,

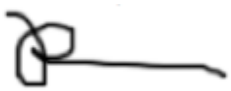
Thank you for the opportunity to provide input on Colorado's Water Plan. The Boulder Flycasters are a Chapter of Trout Unlimited, North America's premier coldwater conservation group, and Colorado Trout Unlimited, a leading conservation group in our state. A 501c3 corporation, the Flycaster's mission is to conserve, protect, and restore coldwater fisheries and their watersheds. We currently have over 1000 members in the Boulder area and implement our mission with outreach events, youth education, and conservation projects. Boulder Flycasters has been involved in many conservation projects over the years. In the last five years we have implemented major stream and riparian habitat improvements on Middle Boulder Creek, South Boulder Creek, and Jenny Creek in the upper Boulder Creek watershed. Given our mission and goals we are very interested in a Colorado Water Plan (CWP) that:

- **Keeps water in streams for fish, wildlife, and recreation**: The Colorado Water Plan should support innovative water management techniques and irrigation infrastructure upgrades that improve agricultural operations and increase river flows. The CWP should provide a mechanism to compensate agricultural and municipal users who use their water rights to improve stream flows.
- **Establishes stream management plans (SMP) in each basin and provides for implementation of the SMPs**: The Colorado Water Plan should ensure that each basin roundtable funds, adopts, and implements a SMP that includes consumptive and non-consumptive uses. Additionally, each SMP should be required to integrate land use and water planning.
- **Current fish and wildlife habitat, as well as recreational opportunities, should not be diminished by future water uses**: No new intra-basin transfers should be considered without an efficiency and conservation plan first funded and enacted. The Colorado Water Plan should reject all new trans-basin diversions (TBDs) unless the project proponent (a) is employing high levels of conservation; (b) demonstrates that water is available for the project; and (c) makes commitments that guarantee against environmental or economic harm to the basin of origin.
    - As such, we suggest that the CWP include a "no loss" statement that any transfer, and/or improvement to water infrastructure needs take in consideration of physical habitat that provides places for feeding, hiding, resting, and spawning for aquatic life. No improvement should decrease available aquatic habitat in Colorado.
- **Incorporates bypass flows a useful tool for providing resource protection as required under federal law**: The CPW should include language that supports cooperation with federal agencies and encourages efforts to make the CWCB's instream flow program an effective alternative for federal resource protection responsibilities.

- **Recognizes climate change and its impact son Colorado's fish and wildlife:** While the CPW certainly does not have the ability to turn back the clock on climate change the Plan should recognize that climate change will have a negative impact on Colorado's endemic fish and wildlife. As such, the CPW should require that water uses consider the impact of climate change. The SMP's should also be required to assess and evaluate potential climate change impacts.

If we neglect the water need to keep the Colorado environment healthy, we are eliminating the very thing that makes Colorado so attractive to all its residents. Having a CPW that is sensitive to environmental health and Coloradans' favorite recreational pursuits is very important – we thank you for considering our comments and look forward to reviewing the final draft.

Sincerely,



Robert McCormack
President, Boulder Flycasters
PO Box 541
Boulder, CO 80306
cell-201-213-7295
troutrobert@gmail.com
Boulderflycasters.org

TROUT UNLIMITED

September 17, 2015

cowaterplan@state.co.us

To whom it may concern:

West Denver Chapter of Trout Unlimited wholeheartedly supports and commends CTU's statewide comments on the Colorado Water Plan. By incorporating the suggestions by CTU, we believe this Plan, indeed, provide a strategic vision for a productive economy, supporting sustainable cities, a productive agriculture, and a strong and viable environment.

On a more local, parochial level, our Chapter –WDTU – is concerned about the health of its "adopted" river – Clear Creek. Mining contributed to Colorado's glorious history, but left an inglorious legacy- and that was particularly evident on Clear Creek where its waters were turned into mud by countless placer operations set up in its beds and large-scale mining enterprises. The water quality of the main stem of Clear Creek has improved, thanks in large part to treatment plants built in some of the mountain communities along the river and to government-citizen group habitat efforts. However, continued vigilance is needed and additional clean-up work is required. THE North Fork of Clear Creek is basically sterile, completely devoid of insects and fish. There are still mines in the Clear Creek drainage that dump waste into

the water. And, there are miles of unimproved or in some cases, illegal, roads and ATV trails that contribute to the build-up of sediment in the creek. An accompanying problem concerns the I-70 Corridor that parallel much of the main stem of Clear Creek. Every year tons of salt, sand, and gravel from I-70 make their way into Clear Creek, smothering breeding areas, and filling in holes where trout typically reside during the winter months. The Colorado Department of Transportation should and must take steps to address this issue if trout are going to continue to survive on Clear Creek.

Recently Colorado Parks and Wildlife and the Federal Forest Service choose two small streams on the Clear Creek Drainage for the reintroduction of the State fish, the Greenback Cutthroat. These creeks are the first streams in Colorado to have the Greenbacks. To insure the survival of these fish and all aquatic animals and plants in and on Clear Creek water flow as well as water quality must be maintained.

Thank you for the opportunity to voice West Denver Trout Unlimited's input into this very critical water plan for Colorado's future

Sincerely,

Tim Toohey

President WDTU

The Southern Colorado Greenbacks chapter of Trout Unlimited fully supports the Colorado Water Plan comments letter submitted September 17, 2015 to the CWCB.

Our chapter would also like to request that CWCB consider acknowledging the need for a state-wide water hotline and including in the water plan. The hotline would enable citizens (or others) to report high water temperatures, noxious spills, fish kills, etc. to the state. Information provided could then be used to assist emergency personnel in quickly evolving situations such as toxic spills. Non-emergency information such as high water temperature observations could be used to provide long term tracking information that would add to the body of knowledge about specific stream and river reaches. Albeit anecdotal, information like this can assist in information gathering efforts like Stream Management Plans which seek to balance consumptive and non-consumptive uses and protect our healthy rivers and streams for all.

Thank you for the opportunity to provide comments on this important plan.

PUBLIC INPUT ITEM 136

First Name: Sonia
Last Name: Skakich-Scrima
Affiliation: What the Frack?! Arapahoe, grassroots group
Email: joejederman@msn.com
Phone (Example: 000-000-0000): 303-755-8129
Cell Phone (Example: 000-000-0000):
River Basin: Metro
Constituent Group: General Public
Comments to be considered in Colorado's Water Plan:
(same as uploaded document, below)
To protect and conserve the already scarce water of our state, the Colorado Water Plan must fully orient to the current, unprecedented historical context ,and reprioritize the goals and timelines of the plan.

According to the metaphorical Doomsday Clock established by Manhattan Project scientists to indicate catastrophic threats to our world, reset Jan 22, 2015, we are at 3 minutes till midnight, due primarily to escalation of "progress" towards irreversible climate collapse tipping points (http://www.livescience.com/49527-doomsday-clock-3-minutes-to-midnight.html) . According to the 2014 report of the Intergovernmental Panel on Climate Change, the available time to effectively address climate change and avert abrubt, irreversible tipping points of climate collapse is "closing fast".

According to a seminal Rand Corporation report prepared for the Pentagon back in 2004, climate collapse would result in collapse of viable agriculture, global wars for clean water and food, the largest refugee migration ever seen on the planet, and collapse of continuity of civilization. According to the US Joint Chiefs of Staff and other military leaders, climate change is an unprecedented "threat multiplier" that poses the greatest security risks and challenges ever posed to humanity. All credible science, security agencies of every country, and even insurance companies acknowledge that evidence of climate change is unequivocal and that level of ocean acidity, rates of more frequent and ferocious SuperStorms, drought, and flooding across the globe are alarming already at this time. The U.S. military has integrated climate change associated threats (e.g. climate refugees, civil chaos of SuperStorm effects, increasing scarcity of clean water, etc) into training, operations, and planning. In light of the fact that domestic weather-related losses have increased fourfold since 1980 and that extreme weather events led to more than $500 billion in covered losses between 1980 and 2011, insurance companies have readjusted their exposures related to Extreme Weather events (per the president of the Reinsurance Association of America , “Insurance is heavily dependent on scientific thought" and scientifically grounded projections. "It is not as amenable to politicized scientific thought.”)

The best available scientific projection informs us that we have an ever diminishing window of opportunity to address climate change, to avert cataclysmic disaster and foreclosure of a viable future. Each major data expansion,that updates projections with new empirical data, shows ever escalating rates of climate instability and ever larger devasting impacts to

the interacting systems of our planet (air and water currents, temperatures at the poles, ocean acidity, etc) and to its biota (human, animal and plant life), including evidence of a 6th extinction event for planetary animal life. By all measures, the looming tipping points of climate collapse poses the largest and most serious threat humanity has ever faced and addressing it must be our most urgent priority.

The best available science informs us that in order to avert climate collapse, for a viable future, we must:
-Rapidly transition away from climate altering fossil fuels and to cleaner, sustainable,renewable energy
-Change agricultural and mineral practices (such as deforestation, heavy petroleum product use in agriculture, mountain top removal mining, mineral extraction and unconventional oil and gas extraction processes that permanently destroy water for future use, and transition to sustainable agriculture that saves water and promotes biodiversity)
-Change transportation, distribution patterns, and eating habits (e.g., alternative energy transportation, local sourcing of food, a less water intensive diet – i.e. less meat)
-Change the way we use and conserve water

The primary impacts of climate change for Colorado were outlined in a 2011 report commissioned by the Department of the Interior, regarding water and the Rocky Mountain west. The report projected decades of increasing water scarcity. Subsequent scientific modelling from Columbia University (Seager et al, 2012) and other scientists, upped the urgency of that projection, and characterized it as essentially permanent Mega Drought that would begin to reach irreversible tipping points within 8 years, unless radical measures were instituted regarding both climate altering air emissions and water use in the West (!!).

Yet, in Colorado, we have over 55,000 oil and gas wells that employ high volume slickwater horizontal fracturing ("fracking") to extract oil and gas from shale beds and are set to double or triple that number, especially if the export ban is lifted and the current round of trade treaties go through, setting export quotas. Current science informs us that extraction of oil and gas from shale (fracking) has a many times larger greenhouse gas climate footprint than conventional oil or even coal and that expansion of fracking will be expected to escalate climate instability.

In Colorado, escalation of climate change is escalation towards permanent Mega Drought, not only due to the climate impacts of fracking, but due its large volume use and destruction of water. Each well uses approximately 3-5 million gallons of clean water for each frack, and each well can be fracked up to 15 times. To that water, approximately 60,000 gallons of toxic chemicals are added (lubricants, biocides, etc), and it is injected underground at great pressure. The "produced water" that comes back up contains not only the added chemicals, but also toxic deep earth heavy metals , including naturally occurring radioactive materials. The bulk of this

toxic slew is transported to deep injection wells, to be sequestered and capped, removed from the hydrologic cycle permanently, precisely because it is irredeemably poisoned. That is a lot of permanently contaminated water. That is a lot of water removed from our hydrologic cycle forever. Especially for a semi arid state where water is already scarce and the chief climate change impact will be irreversible Mega Drought unless we create radical changes in both emissions and water usage.

But the "produced water" in deep injection wells and oil and gas producing wells poses additional threat as well. Hydrogeologic (study of movement of liquids underground) studies that model the movement of such produced waters undergound, taking into account the eventual degradation and failure of concrete casings and the permeability of shale, etc., estimate that water remaining in the well can eventually migrate up to a mile or more per year, depending upon local geology. That means that wells, aquifers, and other ground water is at risk of future contamination. An aquifer was thus contaminated in Pavilion WY (where signature frack chemicals were found) and many water wells have been contaminated in Colorado via underground methane pockets disturbed by fracking and migrating to wells. And of course, "incidents" happen, causing spills or leaching into waterways, such as the seepage into West Devide Creek and the spill into Parachute's springs and iconic waterfall as well as nearby rancher's wells, the large spills related to the flooding several years ago, etc. In fact, Colorado has had about 1.5 incidents per day on average over the past few years.

Destroying Colorado's already scarce water in large volumes, to produce oil and gas from shale, by a method that escalates climate change and thus irreversible Mega Drought in our region should not be permitted. Just as new in situ uranium mining projects and fracking should not rationally be permitted at the headwaters that serve all of metro Denver (i.e. South Park). Yet these commercial, for profit projects that threaten serious, large scale, permanent harm are permitted, via the regulatory framework of the Colorado Oil and Gas Conservation Commission, just as a certain amount of toxic air pollution and waterway mining leaching and industrial waste and pesticide and fertilizer runoff and other water pollutions are allowed by the Colorado Department of Public Health and Environment and by Department of Natural Resources. Each agency has its own regulatory framework and none of them take into account climate change, which is outside of each regulatory box, not under its purview. For the regulatory agencies, their regulations are designed, for the most part, to promote and allow business as usual.

At this time in human history, in the context of real world climate change progression towards irreversible collapse, such insular regulatory blindness cannot continue. The real world impacts and cataclysmic risks of climate change must be fully oriented to by our regulatory systems, by cross talk, cross planning, data sharing and common urgent orientation to a primary goal: taking all necessary steps to avert climate collapse, in the time frame dictated by the status of the physical world, the pulse of our planet. All necessary steps must include a re- thinking of feasibly allowable

industrial, commercial and governmental practices, and would change the current Colorado Water Plan proposal considerably: in urgency, scope, timeline, goals and priorities.

At this unprecedented time in human history, facing the greatest challenge faced by any generation of humans, we have the opportunity to yet avert cataclysm and foreclosure of a viable future, by re designing the way we do business, our regulatory systems, and the way we create energy, use water, grow crops, transport and feed ourselves. Coloradans are among the better educated Americans. Coloradans uniquely value the quality of life Colorado has to offer and are willing to take steps to protect quality of life and the environment for the future. Coloradans are ready to work together for a vibrant, future and make sacrifices to prevent foreclosure of a viable future. We are counting on you to lead us to do so by re thinking the Colorado Water Plan, to make addressing climate change a primary priority. Without that demand and goal, the other conservation steps in the plan will be insufficient to protect water for Colorado's future.

Thank you for your consideration.

Sonia Skakich-Scrima, M.A.
Aurora CO

PUBLIC INPUT ITEM 137

Comments on draft Colorado Water Plan

Emily Tracy
Breckenridge, Colorado
etbreck@gmail.com
September 17, 2015

I am a resident of Summit County, in the Colorado River Basin. I teach part-time in the Sustainability program for Colorado Mountain College, and I serve on the Countywide Planning Commission for Summit County. However, my comments on the draft Colorado Water Plan are my own, and do not represent any particular constituent group.

Though many on the Western Slope where I live view water issues in a Western Slope/Front Range frame, with (understandable) fear that the Western Slope's limited water supply is at further risk because of the significant population growth that continues along the Front Range. For purposes of Colorado's first statewide water plan, I think it is essential that all stakeholders view water supply and demand from a statewide perspective, rather than from an "us vs. them" frame. As a resident of a region heavily visited by tourists – Summit County – I know that many thousands of Front Range residents value the mountain vistas, healthy streams, rivers and lakes, skiing, rafting and fishing, and other recreational opportunities Summit County and other parts of rural Colorado provide. In my view any future water proposals and plans should – in addition to preserving water rights under Colorado law - protect Colorado's rivers, promote and require high levels of water conservation and recycling, provide for meaningful public input, and have the support of local communities in the affected areas. The provisions in the "conceptual framework" which is under discussion regarding any potential future transmountain diversions should be affirmed and in some way made a formal, enforceable agreement.

PUBLIC INPUT ITEM 138

First Name: Rege
Last Name: Leach
Affiliation: Retired CDWR Div 7 Engineer
Email: rleach@frontier.net
Phone (Example: 000-000-0000): 970-259-1721
Cell Phone (Example: 000-000-0000): 970-946-5689
River Basin: Metro
Constituent Group: Municipal
Comments to be considered in Colorado's Water Plan:
The information collected on water availability, current use, and future use is solid. As retired CDWR Div 7 San Juan Dolores River Basin Engineer I can attest to the validity of the information in these basins. It appears the information from the rest of the river basins in the state is accurate as well. This confirms what we thought was the pictire which is there is adequate water in the west slope and a deficit on the front range.
Alternatives for providing the gap in supply vs demand for the front range is what is really needed. Conservation is an alternative which is a given it is really not an alternative just a given when projecting future supply needs. Buy and dry is an alternative, develop new supplies on the front range is an alternative, bringing additional water from the west slope (colorado river basin) or other outside sources are alternatives.
The Water Plan has done its job which is quantify the supply demand picture and lay out future scenarios.
Now a real alternative of all possible alternatives is needed. This analysis needs to establish a goal such as providing x acre feet of water by 2015 to the front range communities of Denver. Colorado springs. Puebo etc. With that goal lay out alternatives to accomplish this goal. Each alternaitive will have a detailed plan, cost estimate to construct and operate and maintain. impacts and obsticles to overcome including environmental and economic and political. Alternatives should be scrubbed or alternatives eliminated as appropriate. Leaving only the most emplementable for further analysis.
The state along with entities to receive the water should lead this effort. Funding for the studies should be paid for by water users, state tax payers and federal cost sharing. Other states may be interested in participating is they have benefits such as Wyoming.
New York City just completed the first subway extension in 25 years which cost $2.5 million and I fully expect Colorado investment into a future water supply for the front range will be of this effort.
I would not expect full agreement from all areas of the state particularly the west slope. Those that have enough water will not see what is in it for them. But Colorado must move forward with what is best for the state as a whole. The front range is our economic engine and I for one would prefer keeping the population on the front range and providing water and resources to maintain the population.
West slope rivers and streams can be left with water in them if water is diverted upstream in the Colorado (Flaming Gorge Reservoir) and piped to the East Slope of Colorado. Environment in Colorado is maintained while meeting water needs.
Colorado has water available within its allocation of the Colorado River

under the Laws of the River. If adequate water is left to meet the minimal future needs of the West Slope the remaining portion of the allocation can be developed. AS for water rights this newly developed water would have a junior priority. In case of a call on the river juniors would be shut off and seniors would be in priority with the possibility of having a water bank to allow sharing water through a payment or banking system. Seniors would be paid accordingly to allow juniors for the privilege of use.
I am sure there are years of issues to resolve. But the sooner started the nearer a solution.
Thank you for completing the water plan it is a good start defining the problem. Now solutions need to be evaluated and a few possible alternatives evaluated.
Funding can be accomplished through water users. state tax base and federal support.
Thanks you for providing opportunity to comment on such an important subject.
Feel free to contact me for clarification.
Rege Leach
Retired CDWR Div. 7 Engineer

PUBLIC INPUT ITEM 140

First Name: Randee
Last Name: Webb
Affiliation: Aurora citizen and homeowner
Email: rwebb153@hotmail.com
Phone (Example: 000-000-0000): 303-750-6858
Cell Phone (Example: 000-000-0000): 720-291-5132
River Basin: Metro
Constituent Group: General Public
Comments to be considered in Colorado's Water Plan:
PROBLEM: "It is estimated that the Metro Roundtable will need an additional 183,000 acre feet (AF) to 272,000 AF of Water to meet its 2050 demands, with passive conservation included. Additionally, the South Metro area expects it will need approximately 25,900 AF of additional annual supplies of Water to replace non-renewable Denver Basin groundwater."

GREATER PROBLEM:
Currently in Colorado, fracking uses about 180,000 acre feet (AF) of Water each year; by the way, that amount would sustain a city of 180,000 people each year. And permitting for new wells is skyrocketing, which will mean more Water will be permanently poisoned. No amount of “cleaning” will cure fracking’s produced liquid.

STILL GREATER PROBLEM:
The oil and gas industry in Colorado is ramping up and getting permits for loads more wells, which means the number of acre feet of Water used to extinction each year will increase tremendously.

ANSWER:
Stop oil and gas fossil fuel development, which poisons Water.

WATER & CLIMATE CRISIS:
The Governor's key water policy points and the summary points of the new plan need to include addressing climate change (which has become a crisis) as the key priority. Then, using the science and ensuring a viable future for people and planet, for life, as a basis for policy would mean that the committee and State plan need to take a stand now on energy policy, fracking (oil and gas development and all related activities), agricultural practices, etc.

PUBLIC INPUT ITEM 141

September 17, 2015

Colorado Water Conservation Board
1313 Sherman St., Room 718
Denver, CO 80203
RE: WLA Comments on 2nd Draft State Water Plan

Dear Board Members:

The Western Landowners Alliance advances policies and practices that sustain working lands, connected landscapes , and native species. Our members represent ownership and management of over 13 million acres of agricultural production land that also provides critical watershed, wildlife, open space, and recreation values to Colorado's rural economies and state.

The Plan is an extensive document. Our comments focus on the elements of the Critical Action Plan (Chapter 10), and we look forward to continued involvement and dialogue in the planning and management of Colorado's water resources.

WLA is pleased to submit the following comments related to the second draft of the State Water Plan and looks forward to continued participation and dialogue on the future of Colorado's water resources, including agriculture and landowners' roles in conservation and policy:

- The Plan collates a significant amount of information and resources that will prove helpful for years to come as multiple groups and interests continue to discuss water management and opportunities in Colorado. We comment the Board and the Basin Round Tables for their past and ongoing commitment to generating helpful resource information for this process and beyond.

- p. 399, second bullet – throughout the following tables, legislative action is mentioned rarely, and not in relation to activities that would appear to potentially require additional funding. The explanation of the "programmatic" entry notes potential "resource impacts". We suggest inserting "fiscal" before resource to clarify the apparent intent.

- p. 400, Funding Plan, #5 – It would appear limiting to provide a hard number related to stream management and watershed plan support. We suggest adding "at least" prior to $1 million to exemplify the level of commitment, but ensure the option to provide more if feasible.

- p. 402, 7. – This Action is unclear as to whether the tax credit for efficient outdoor landscapes is for replacing existing landscaping, new, or both. Given the predictions for significant growth, and the potential related impacts, it would seem a more aggressive measure than broad tax expenditures is warranted. A more fiscally responsible approach may be to evaluate tax credits only for existing landscaping, and implementing planning controls on the scale of water-intensive landscaping for new development. A similar comment applies to Action 5 on p. 407.

- p. 402, Multi-Purpose Initiatives – The last sentence in the introductory paragraph seems to assume the state will endorse any such initiative. We suggest including "potential" before "state endorsement". Also, the entire section refers to "permitting" and "projects", yet appears to refer to a specific type of permitting or project. Clarification would be helpful to lay readers. Similarly, on p. 403, action 6, we suggest adding "(and if) supporting", to read, "Determine how Colorado will endorse a project after (and if) supporting … certifications and … plans are completed."

- As noted above, the programmatic entry can include activities that may impact (fiscal) resources. Action #3 on p. 403, as well as some others, appears to commit state agencies to significant responsibilities. We question whether there should be more acknowledgement that such responsibilities could require additional resources. If it's assumed they will cut existing programs to accommodate Plan activities, that assumption should be more clear.

- p. 403, b, 1 – The state should take a more active role than "supporting" green infrastructure. Advancing these technologies requires leadership and incentives. We suggest replacing "supporting" with "advancing" and altering the other row entries accordingly.

- P. 403-4, Water Quality – We suggest the state either integrate flow-related impairments into its 303(d) list (if not already) or develop a statewide list of flow-impaired streams to help agencies, NGOs, and landowners prioritize restoration efforts and funding.

- p. 404, 3 – The state should aspire to reduce non-point-source pollution, not just manage it. Also, this is another entry that begs the problem noted above that "programmatic" belies the likely need for additional appropriations to achieve the action.

- p. 404, 1 – Is it really a desired state action to "support the maximum use of water rights…"? Why not start this Action with "Explore opportunities to create more flexibility…"? Also, it would seem a "possible legislation" entry should be added to the "Type" cell in this row.

- p. 405, c, 3 – Expanded grant funding is yet another place where greater recognition of potential legislative appropriation needs would be helpful.

- p. 405, d – There appears to be no recognition in this section that demand projections may change in the future. This section should acknowledge that with a title of "Meet or Reduce Colorado's Water Gaps (suggested addition underlined). The following text should include "avoid or reduce … undesirable outcomes…". Per capita water use is steadily declining and policies should be implemented to track as well as foster such demand changes.

- p. 405, d, 1 – It would seem unworkable if the CWCB and BRTs are expected to provide technical, financial and facilitation support for projects "when requested by a project proponent". Something more practicable and fiscally responsible would be to do so when requested by a BRT.

- p. 406, II, e, 4 – This action item could benefit from including the federal government in the "Partners" column, and acknowledging the potential to change or add project purposes to federal projects. Similarly, "potential congressional action" could be a relevant entry in the Type column.

- p. 406, III, a, 2 – Federal agencies (e.g., NRCS, USGS, Reclamation) seem to be relevant partners for this action. A state plan can't compel them to act, but leaving them out eliminates recognition of these valuable programs.

- p.408, c, 2 – Land use practices should be incorporated into water conservation plans, but water conservation practices should also be incorporated into land use plans. If doing so would require legislative action, this should be reflected in the Type column.

- p. 408, IV, a, 1 – Recognize the need to assist farmers and ranchers with income diversification. Assistance should be provided for new farmers to own land, but also to manage land if ownership is not a near-term option.

- p. 409, a, 3 – Add "and tradeoffs" after "efficiency opportunities" to acknowledge that efficiency projects can have effects on hydrogeology.

- p. 409, b, 2 – This is yet another location where the likely need for additional public investments seems a glaring omission with a mere "Programmatic" reference. Similarly, the reference to "a newly established grant program" in Action 4 on p. 410 clearly seems to need recognition of a required investment or acknowledgement that other grant programs (or resources) will be shifted to this purpose.

- P.410, V – This section should not just refer to a "robust recreation industry", but to robust recreation opportunities. All Coloradans should be considered when discussion water-related recreation. Similarly, on p. 411, heading b, delete "economic". Modify the following sentence to read, "Protect and enhance economic and intrinsic valued to individuals, communities, and local and statewide economies derived from environmental and recreational water values (delete "uses"), such as fishing boating, waterfowl hunting, wildlife watching, camping, aesthetic enjoyment, and hiking (suggested additions underlined). Delete "Economic" from the following table. Delete "economically" from the related Action. Water for recreational use should not be important merely if it generates economic value.

- p. 411, c – Replace "functional" with "healthy" and delete "to promote long-term resiliency". Riparian areas can function, but we want them to be healthy. More direct language is better.

- p. 411, c, 2 – Why the reference to "with existing programs" here? Is this (aquatic, riparian and wetland projects) the only place the call for expanded programs, actions, techniques, assistance, and more is limited to existing resources? Delete.

- p. 411, c, 3 – Add "aquifers" to the needed assessment metrics.

- p. 412, VI, a, 2 – Is this the only location where "Coloradans" are included as partners? Is that justified?

- p. 412, 3 – Something more specific seems justified here, given the work that has gone into this multi-year effort. Possibly annual updates or workshops?

- p. 414, e – Alter heading to "Address Climate Change"; "prepare for" connotes that it isn't occurring yet. Similarly, alter next sentence to read, "Respond to and monitor related changes associated with climate change and variability." If the idea here is to be proactive, select another phrase than "prepare for" in these areas and the related Action. Add "researchers and universities" to the Partners column for Action e, 3?

Editorial Comments/Suggestions:

- p. 398, first bullet – a comma is missing between "skiing" and "recreation", risking interpretation that the only recreation that is important is skiing.

- P. 399, 3. – We suggest that the description of this "value" be edited to read "… majestic valleys and access to this raw beauty..". "Easy" access to "all" this raw beauty is not likely a shared nor relevant goal for a state water plan.

- p. 401, c – “maximize the smallest amount” is awkward. We suggest replacing “that maximize” with “whereby”.

- p. 402, II – This entire section refers to “permitting”, but must be related to storage projects. Some clarification seems warranted. Encouraging state agencies to complete their work early in the permitting process conveys that these are not state permits. Clarification would be helpful, such as in the heading – “Improve (Infrastructural? Federal Water Storage? Water Project?) Permitting Processes”.

- p.402, II a 1 – “lean” events?

- p.404, c – Achieve consistency in introductory section text by beginning the black text with “Maximize options…”. No other sections begin with a “why” or value statement.

- p. 404, c, 2 – Clarify what “pilot program” is being referenced.

Thank you for the opportunity to comment. Again, the process and document are monumental. Please let us know if we can be of assistance or if you have questions regarding our comments.

Sincerely,

/s/Kathleen Williams,
Associate Director/Water Program Manager

PUBLIC INPUT ITEM 142

First Name: Peter
Last Name: McBride
Affiliation: National Geographic
Email: info@petemcbride.com
Phone (Example: 000-000-0000): 970-948-1718
Cell Phone (Example: 000-000-0000): 970-948-1718
River Basin: Colorado
Constituent Group: General Public
Comments to be considered in Colorado's Water Plan:
Dear water planners --
As a native Coloradan who grew up on a cattle ranch near the banks of the Roaring Fork River, I have paid close attention to water my entire life. As a National Geographic photographer and documentary filmmaker, I have focused on the state of Western water for decades. And as a lover of river activities, I have played in our watershed for years. So I applaud the efforts set forth to appease the many interests/ needs/ uses of this water plan.
First and foremost, drought is severe and climate change is playing a hand. I have seen it throughout the Colorado watershed, from its dry delta and beyond. So conservation is a critical tool to helping that. It is one of the best reservoirs we have and we can often manage it better than mother nature does with our supplies. However, conservation can not be used to enable more growth which it has in the past. Growth is happening but we can't just accept that the state is going to double and pretend we have the water capacity to do so. Growth and water use/ conservation need to be discussed in concert. They are integral and can't be seen otherwise.
Agriculture: It is one of our state's great heritages and assets but it is also one of our greatest straws. We need to promote water efficiency in Ag with policy and we need to enable Ag to work in concert with municipalities and recreation via water trading and water banking. That can only happen if we update our water laws / policy to enable that. Our "Use it or lose it" law does not foster that kind of cooperation. However, models developed and used by groups like the Colorado Water Trust have illustrated successful alternatives for more progressive water programs.
Recreation: This is the golden egg for Colorado but if we don't cherish it and highlight its situation, we could lose the lure that so many come to enjoy. For example, if the Fraser River is diverted more, beyond the 80% already taken from its flow, water temperatures will rise and fish populations will die. There are many other places we have seen such catastrophes (Animas River) and the results ultimately play out downstream and across the entire economy statewide.
We need to strengthen our policies to protect our golden egg— the watershed that supports our fishing, boating, skiing, lifestyle etc.
Lastly, we are all users of our watershed. We need to make the public more aware of that. Our taps and sprinklers and pocket books are connected to our mountains, rivers and lake —of which the majority reside in the Western slope. We need to make such awareness centerpiece as we move forward with a water plan that supports all our collective needs and interests, including the wildlife and fish too.
Sincerely,

PUBLIC INPUT ITEM 143

Comments on the second draft Colorado Water Plan

September 16, 2015

Submitted on behalf of the Audubon Society of Greater Denver

Dear Governor Hickenlooper,

Thank you very much for providing this opportunity to comment on the second draft of Colorado's State Water Plan.

The Audubon Society of Greater Denver is a grassroots conservation organization founded in 1968, with approximately 3,000 members in the Denver metro area. Our mission is to advocate for the environment, connecting people with nature through research, education and conservation. Healthy, resilient river systems provide complex aquatic and riparian habitats and support diverse, abundant and sustainable populations of aquatic and riparian species. Because of our interest in both the educational and recreational value of such species and their habitats, we would like to see a Colorado Water Plan that prioritizes healthy rivers and streams alongside human consumptive needs for water.

It is encouraging to see many of the priorities that Coloradoans have overwhelmingly supported, such as healthy rivers and a "stretch" statewide urban conservation goal, incorporated into this draft of the State Water Plan. We hope that you will continue to support these important priorities with action steps and sustainable funding. However, there is much more the Plan needs to include.

One of our greatest concerns has been that **the non-consumptive needs for water in Colorado have not been quantified** in the Colorado Water Plan (CWP). This is still the case, although this quantification is a goal/measurable outcome and activity in 6 out of 8 Basin Plans (P. 108, Table 6.2.1). We urge that the non-consumptive needs for water, such as amounts needed to sustain recreation and healthy wildlife populations, be assessed and quantified as soon as possible, and that they receive equal consideration with consumptive needs such as agriculture and municipal/ industrial use. The funding needed to perform this quantification should be listed in Chapter 10, Part I, "Assess funding," possibly in #2. Certainly the State will need to contribute funds to aid the Basins in this task.

Non-consumptive uses or "attributes" have been mapped, but much more work is needed to quantify the amounts of water required to keep our rivers healthy and productive and to restore degraded streams. Rivers need scouring flows in the spring, adequate winter flows to support aquatic life and summer/fall flows to maintain invertebrate and vertebrate aquatic species and riparian vegetation. Currently the Plan discusses only the needs and management for cold-water trout streams. This part of Chapter 5 needs significant expansion to outline water needs for maintaining and restoring riparian areas, wetlands, and perennial streams in a healthy condition. We were glad to see that protecting and restoring watershed health is a goal of all Basins (Table 6.2.1).

Chapter 5, with its map of "Statewide Environmental and Recreational Needs" (Fig. 5-6) does not include Audubon Important Bird Areas, which were included in the South Platte BIP as "Environmental and Recreational Attributes" (Fig. 2-11, South Platte BIP), nor does the South Platte BIP indicate them on its maps. As an affiliate of the National Audubon Society, we have a particular interest in having such areas recognized and included in water management planning, where appropriate (for instance, Barr Lake State Park, Chatfield State Park, Cherry Creek State Park).

Suggested Planning Process. We envision a planning process that will preserve and restore our streams and rivers and keep them healthy. It should begin with identification of the water requirements of native aquatic and riparian species before any entity undertakes a water project. Resilient river systems depend upon dynamic seasonal flows, and the quantity, quality, frequency, duration, and runoff timing of stream flows needed to sustain aquatic and riparian ecosystems, wildlife and recreation therein should be determined and communicated to the public. Plans for consumptive uses, no matter how "beneficial" they are supposed to be, should be made AFTER this determination so that the public can judge the trade-offs involved in any given project.

The discussion of Stream Management Plans (P. 254) states that they should "identify flow needs for environmental and recreational water uses." The following Steps necessary to develop a Stream Management Plan in fact includes "4) Establishing flow and protection goals for streams and rivers within a given watershed, 5) collecting and synthesizing existing data describing flows for river ecosystems… 6) assessing existing physical conditions of stream reaches 7) developing quantitative flow targets to meet [articulated goals]; 8) determining what new information is needed and best methods for obtaining that information." These steps should be taken, and all data collected and synthesized, for all streams to determine water needs for ecosystem health and restoration, BEFORE any project is allowed to proceed.

The suggested funding level for stream management and watershed plans (Chapter 10, p. 399) is much too small; rather than only $1 million per year, it should be increased at least 10-fold.

Language in **the Overview of Environmental and Recreational Projects and Methods (Sect. 6.6)** suggests that environmental and recreational benefits "be associated with the project" to "garner support from a wider range of stakeholders." However, unless these benefits are well documented, with information obtained via sound scientific methods and processes, projects cannot be promoted on the basis of such benefits. The documentation should not be based on best guesses or depend on adaptive management.

Rather, the CWP should specify that projects and processes should extensively document the supposed "benefits" they will provide, using best available science.

In the discussion of the benefits of multi-purpose projects (p. 243-244), the CWP should also note the costs of such projects and call for public consideration of the trade-offs. For example a reservoir may provide some fish and wildlife benefits but it also destroys riparian habitat, an extremely rare and valuable resource in Colorado; blocks fish migration; and cuts off peak flows that streams need to remove sediment and maintain functioning aquatic ecosystems. Agricultural diversions do indeed provide "late-season return flows" but these are often laden with pesticides, fertilizers and salts that negatively impact the streams into which the return waters flow. The CWP should require an honest evaluation of both costs and benefits of multi-purpose projects and clear delineations of the trade-offs such projects would pose, for public review.

Water Conservation. The CWP should give water conservation (the cheapest, easiest and fastest way to "create" more water) the highest priority among strategies for meeting State water needs - including municipal water conservation, reuse, agricultural efficiency, and water-efficient energy supplies We were glad to see the Plan include a stretch goal of 400,000 acre-feet for municipal conservation (P. 164), rather than the "low to medium" conservation goal of 170,000 acre-feet; to this should be added substantial improvements in agricultural efficiency, since agriculture accounts for 80-85% of the water consumed in our State. Increased agricultural efficiency is listed as a goal in 6 out of 8 Basins (Table

6.2.1), and the inclusion of funding considerations to encourage ag efficiency in the Action Items of Chapter 10 is a step in the right direction.

The discussion in Sect. 6.3.4 suggests that water conserved by refurbishing agricultural infrastructure could benefit recreation and the environment if a voluntary flow management program or agreement is in place (p. 194). However the instream flow benefits are limited to the location where return flows previously entered the stream. We suggest that a portion of this conserved water be required to be dedicated to stream flow restoration anywhere along the stream course, possibly under the authority of the Colorado Water Conservation Board. This would require legislative action, which should be included in the list of action items in Chapter 6.

One strategy for increasing agricultural efficiency would be for the State to finance the retirement of marginal farmlands, especially on soils that are naturally high in salts. This would require a program to identify such lands and financing to buy out the farmers that cultivate them. However, the savings in water and the improvements in water quality could be substantial, and we urge that the CWP include such a strategy for increasing agricultural efficiency in Chapter 6.

Reuse of water supplies to the extent possible is another important "source" of water and should be a CWP priority. It is included in most Basin Implementation Plans. However, Chapter 10 does not include an action item for legislation that will make reuse easier to integrate into water management, though the Draft IBCC Conceptual Framework regarding new TMDs in Chapter 8 (p. 322) states that "Legislative and regulatory reform may be desirable to achieve [the reuse of these fully consumable water supplies in an appropriate and environmentally safe manner]," and the Colorado BIP also calls for legislation to encourage reuse. Again, reuse is a strategy that should be one of the top priorities in the CWP.

State Endorsement of Water Projects. The Critical Actions listed in Chapter 10 include having the CWCB become a project beneficiary "for projects that are central to fulfilling the goals of the CWP" (P. 399). We suggest the following criteria for State funding and involvement in Basin projects:

1) Protect and restore rivers and their habitats

2) Promote high levels of water conservation and recycling

3) Provide clear, science-based information and public input opportunities

4) Have the support of local communities

5) Be cost-effective

6) Use "safe" or "firm" yield figures to determine this cost-effectiveness rather than average annual yield.

Need for Water Stewardship Education. Part VII. in Chapter 10 lists critical actions to advance education, including a grants program. Such a program needs to be adequately funded; the CWCB should propose a generous yearly amount here. Water education and outreach is critical to the formation of informed decisions by the public, especially in view of our growing population and the fact that much of the public is not aware of the water challenges we face. We need to change the culture and our relationship with water through comprehensive education. Every Coloradoan should understand the value of water, not just its cost. We urge that substantial monies be dedicated to water stewardship education.

Coordination between land use, growth, and water supply. The Plan mentions legislation passed this year (2015) requiring the Colorado Water Conservation Board to provide training for local governments in integrating land use and water supply. This is a baby step in the right direction, but much more needs to be done. The Colorado Water Plan provides an excellent place to specify measures to accomplish this integration and suggest legislation that will make it mandatory. The discussion in the CWP remains fairly general (Sect. 6.3.3, P. 181).

Give environmental and recreational needs and values equal status with consumptive water needs. So many times, plans for water projects and water management move "full steam ahead" and only include environmental and recreational considerations as an afterthought. For example, in the case of the Chatfield Reallocation, described in glowing terms in the South Platte BIP, the Corps of Engineers and the State have chosen the most environmentally damaging alternative for providing the south metro area with increased surface water supply, jeopardizing an important recreation site (Chatfield State Park) and destroying hundreds of acres of migratory bird habitat, wetlands, and critical habitat for a Threatened species in return for for a very small, and unreliable, amount of water (0 dependable yield). In Colorado, wildlife-based recreation contributes about $1.4 billion to the State's economy. The Colorado Water Plan should give this activity equal importance in planning for water policies that will support our State into the future.

Other points we would like to have considered:

Minimum stream flows are not adequate. While they can accomplish some environmental goals, minimum stream flows are not adequate as a sole protection for environmental needs and values – they are too little, and the water rights too recent. Streams need dynamic seasonal flows to provide complex and connected aquatic and riparian habitats and support and sustain diverse and stable populations of native aquatic and riparian species. Studies to determine the quantity, timing, duration, and frequency of these necessary flows should be performed in all Basins and actions taken to provide them. Currently 73% of the 18,767 miles of streams covered by important riparian and wetland areas have NO protection; Colorado needs to move forward to protect more of them.

Minimize construction of surface water storage. Reservoirs store water on the surface where a large percentage is lost to evaporation. "Smarter" storage should be encouraged: through aquifer storage and recovery, or in deep gravel pits where evaporation can be minimized. The State Water Plan should be flexible enough to deal with changes caused by the warming of our planet due to fossil fuel consumption and the ensuing increase in evaporation and transpiration rates.

Retain native phreatophytes. The draft mentions removal of phreatophyes; however native phreatophytes like willows and cottonwoods stabilize streambanks, reduce water evaporation, and provide riparian habitat that is vital for wildlife; something like 75% of wildlife, and 90% of Colorado birds, spend some part of their life cycle in riparian zones. We urge that only <u>non-native</u> phreatophyte control be the subject of the CWP and in watershed master plans.

Storage in itself does not equal new water supplies.

There seems to be a philosophy in Colorado that yield follows storage, much as the old, and disproved, adage that "Rain follows the plow." The Colorado Water Plan should ensure that slavish adherence to this false principal does not dominate water planning, especially in light of climate change. As mentioned above, surface storage can result in increased evaporation; the nature of water rights

involved may preclude reliable yield from storage, as in the Chatfield Reallocation project (there the US Army Corps of Engineers determined that “dependable yield is 0”); and other considerations may make storage ineffective.

Rivers and streams need to be viewed as continuous systems, not isolated reaches. Diversions and pollution upstream can have severe impacts on downstream ecosystems. The State should be protecting the upper reaches of mountain streams, for example, even when they are intermittent, so as to ensure water quality and quantity for downstream users and resources. In the South Platte BIP, there are frequent descriptions of water conservation as causing dewatering of streams – this results from a view of only certain reaches below the conserving entity, while in other reaches water conservation could result in greater stream flows if less water is diverted there. Evaluation of water management measures such as conservation and reuse must integrate the various demands and uses along the complete length of our streams.

Ground and surface water should be viewed as interrelated systems. Recent controversy over the use of ground water in the South Platte alluvium should have taught us a lesson: often ground water and surface water resources are closely related. Water planning needs to take this into account and acknowledge that ground water depletions can affect the quantity and quality of surface water in some areas.

No more Transmountain Diversions (TMDs). The Colorado River is already over-appropriated and any additional diversions from that Basin to the Front Range will contribute to decreases in water quality and degradation of the aquatic and riparian ecosystems that still survive. The South Platte Basin should not count on augmenting our water supplies via diversions across the Continental Divide. Rather, we should focus on conservation, reuse, recycling and more efficient use of both our native water on the Front Range and of the 500,000 acre-feet of water now imported from the Colorado River Basin.

Updating of Colorado’s Water Plan must be done on a regular basis. The draft CWP contains no firm schedule for updating the Plan. We strongly suggest that it be updated regularly every 5 years. The draft frequently mentions the need for innovation and further study; periodic, regularly-scheduled updates can provide the initiative and mechanism for incorporating such studies and innovative measures into the Plan and into the BIPs. Revisions should be accomplished via a transparent, inclusive process, with ample public notification and participation.

The mission of the Audubon Society of Greater Denver, to advocate for the environment by connecting people with nature through education, conservation and research, fully supports Governor Hickenlooper's Executive Order of May 13., 2013 which cites " A strong environment that includes healthy watersheds, rivers and streams and wildlife". Our Nature Center located at Chatfield State Park and on the South Platte Watershed makes us acutely aware and engaged on water issues and the impact to wildlife and recreational uses.

Submitted on behalf of the Audubon Society of Greater Denver,
Pauline P. Reetz, Conservation Chairman
9308 S. Wadsworth Blvd.
Littleton, CO 80128
Tel. 303-973-9530

PUBLIC INPUT ITEM 144

OURAY COUNTY WATER USERS ASSOCIATION

Colorado Water Conservation Board
Via Email: cowaterplan@state.co.state

Re: July, 2015 Draft – Colorado Water Plan

September 16, 2015

Dear Chairwoman Hoppe and Members of the Board:

Thank you for the opportunity to comment on the second draft of the Colorado Water Plan. The planning effort has been a worthwhile process and has resulted in positive momentum for members of the Ouray County Water Users' Association to assess their water assets and needs. We believe that the draft water plan captures the importance of planning for future needs, as well as the limitation on water available to serve all parts of the state. We understand the difficult task ahead for water providers in achieving the necessary water supplies for increased municipal uses in the Front Range.

Our members include municipal water providers, as well as agricultural water users, and recreational, non-consumptive water users. We are working together to find solutions that protect existing uses and allow for future growth. In considering action items to implement the state water plan, we urge the CWCB to recognize that one-size does not fit all. Solutions must be crafted that retain local control and decision-making on land use and conservation.

Our members also have a strong interest in preserving the farming and ranching culture that is so important to our part of the state. The economic benefits of agriculture, as well as the more indirect benefits of open spaces, are both very important to our members. Our area of the state also has a prosperous and thriving tourism and recreation industry, and our members strongly support continued water resources being available for those needs. As a result, any discussion of trans-mountain diversions causes our members concern. It is our view that there simply is not water available for a new TMD appropriation, and we believe that the state water plan should reflect that reality. As we assess the water availability for our members in the Upper Uncompahgre, and the future needs of our members, it has become clear that the Colorado River Basin does not have the ability to provide additional water for Front Range needs without damaging existing uses, or creating shortages for the future needs of the West Slope in the future.

We urge the CWCB to recognize that dismantling the agricultural industry on the West Slope, with all of the socio-economic and cultural ramifications that entails, in order to provide more municipal water on the Front Range, is not in the best interests of Colorado as a whole. The Ouray County Water Users Association urges the CWCB to ensure that the Colorado Water Plan truly represents the state as a whole and not allow the final document to simply present a roadmap for future trans-mountain diversions from the West Slope to the Front Range.

We think it would also be useful to provide guidance about the nature of the state water plan in the introductory portion of the document. This document was created as the result of an executive order. It is not a statute, nor is it a binding regulation. It is a planning document and discussion based on information available as of its publication date, and should be viewed as such and nothing more.

We are similarly concerned that the so-called "Conceptual Agreement" not be portrayed as a binding agreement, or otherwise described as a binding agreement. The IBCC has no legal authority to bind parties to an agreement, even in principle. While this seems to be generally understood, the final state water plan should not imply that meeting the principles guarantees success for a new trans-mountain diversion project. While the discussion points are appropriate for future direction of discussions, agreements need to be entered into in the context of specific proposals or projects – and among the actual interested parties – not done on a theoretical basis.

Further, we have concerns about the intent of Principle 1. While the Front Range is said to be in agreement with the IBCC principle that an entity developing additional water will "assume the hydrologic risk" of water availability, such a statement is hollow and merely a confirmation of existing law without a further agreement that existing water rights from the West Slope (presumably agricultural water rights) will not be condemned or otherwise forced to curtail or limit diversions, or fallow ground, in order to provide water for a trans-mountain diversion in years when a junior right would not otherwise be able to divert. It is our understanding that IBCC representatives from the Front Range would not agree to including language in the so-called "points of consensus" confirming that "accepting the hydrologic risk" includes not exercising eminent domain rights to firm up the yield of a junior appropriation. Understanding the these points have no legal authority and are not binding, we would simply point out that this is an important piece of any future agreement as it also affects the "can and will" portion of proof in any water case involving a new trans-mountain diversion. The "can and will" requirement under Colorado law includes whether a project is "feasible" from an economic standpoint. Using other West Slope water rights to firm the yield of a new trans-mountain diversion could be a means of spreading the cost of a project over a greater amount of water, and a more regular yield of water, thus allowing a determination that the project is economically feasible.

As part of the state water plan process, basin roundtables have encouraged and led efforts to review the needs and water resources regionally within the basins. This process has also resulted in recognition that West Slope needs will increase for municipal purposes, recreational and other non-consumptive uses, and to ensure the protection and enhancement of agricultural uses. These additional draws on the Colorado River and its tributaries differs from prospective diversions by the Front Range in that the uses will not be totally consumptive and will return flows to the Colorado River Basin. In viewing this from a state perspective, encouraging more development and population migration from the Front Range to the West Slope may be one solution to ensuring a full supply of water to support an increased population without further depleting the Colorado River through new trans-mountain diversions.

The draft state water plan includes discussion about the use of fallowing, banking, and other irrigation efficiencies. The CWCB should exercise caution in promoting the use of fallowing or similar "banking" type programs as a "silver bullet". While fallowing, banking

and similar concepts may be useful in selected sites, there is limited data at this time demonstrating the practical utility and efficient incorporation of these concepts in long-term water supply planning.

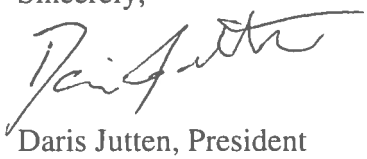
Conservation of water is an important aspect of ensuring sufficient water supplies for the future. However, there can be unintended consequences that will result from a "one-size-fits-all" approach. Agricultural conservation needs to be site-specific to ensure that other water users are not injured by a change in time and place of return flows, or lack thereof. Municipal and domestic conservation likewise needs to be tailored to meet the specific situation of each community. Lawn irrigation in the Front Range, as well as the West Slope, needs to be carefully planned to incorporate "gray" water and other reuse techniques where possible, and the choice of plants and grasses should reflect the arid conditions of Colorado. However, legislative mandates decreeing specific household water-use formulas or percentage limitations on lawn space are not likely to be as well-received as community-specific means of conservation and should not be proposed as action items for legislation in the state water plan.

The state water plan should encourage solutions involving storage of water throughout Colorado. Probably every basin and sub-basin would benefit from being able to capture water during wet years for use in dry years. Solutions may include new techniques in aquifer storage to limit evaporative losses, increasing capacity of existing reservoirs, as well as construction of new off-channel reservoirs. Storage locations that have been considered in the past, but not constructed due to permitting challenges, should be reexamined. Particularly in the South Platte Basin, increasing storage capacity during times of high flows when native water otherwise leaves the state in excess of compact obligations to Nebraska, would eliminate the need for additional diversion of water from the Colorado Basin.

We appreciate the attention that the draft has given to the relationship between forest health and watershed health. Our forests provide storage for winter snow that feed stream run-off. It is important to protect our forests and to prevent wildfires that leave scarred and barren land subject to flooding and sediment flow damaging to water quality. It is our hope that an appreciation of this dynamic will result in more funding being directed to wildfire mitigation and other healthy forest initiatives.

Finally, we support continued and increased financial resources for projects included in the respective BIPs and other new projects that may be developed as solutions to water supply needs. We believe the CWCB grants and funding opportunities are a critically important aspect of providing water for the state for the future.

Sincerely,



Daris Jutten, President

PUBLIC INPUT ITEM 145

RUEDI WATER & POWER AUTHORITY

September 16, 2015

Colorado Water Conservation Board

RE: State Water Plan draft

Dear CWCB Board and Staff,

The following comments on the draft Colorado Water Plan are submitted on behalf of the Ruedi Water and Power Authority, a quasi-governmental agency made up of representatives from Eagle and Pitkin Counties, the Towns of Carbondale, Basalt and Snowmass Village and the cities of Aspen and Glenwood Springs. The Authority has acted as the Roaring Fork Valley's voice on water issues since 1981.

We have previously provided you (most recently on April 15 of this year) with comments addressing sustainable streamflows and other specific aspects of the Draft State Water Plan. This letter is to add a few points to our previous comments.

The Roaring Fork River was recently impacted by a spill from Grizzly Reservoir at the head of the Lincoln Creek Drainage east of Aspen. This spill, which released nearly 400 acre-feet of water stored in the reservoir in a matter of hours, was the result of a problem with the dam outlet works. Fortunately the released water does not appear to be toxic and there do not appear to be any lasting impacts from this event, which occurred on August 12. Coming on the heels of the Animas River spill, however, significant concerns were raised when sediment from the reservoir release turned the river orange for several days. The Twin Lakes Canal Company, managers of the reservoir, has acknowledged that they erred in not providing any notice of the impending spill to local officials and they are working diligently to repair the dam and resume normal operations. It would be appropriate for the Colorado Water Plan to include a recommendation that all dam and reservoir operators, public or private, acknowledge their responsibility to their downstream neighbors by establishing and following a protocol for providing advance notice whenever dam operations and releases change more than a nominal amount. The Animas River incident, and, to a lesser extent, our experience with the Grizzly release, demonstrate the hazards inherent in the management of storage facilities or any structure (like abandoned mines) that retain water and the concern that can arise when those structures fail. These structures must be carefully regulated and subject to strict operational standards if downstream residents are to trust in their safety. The Water Plan is an appropriate place to call for those standards.

There has been some indication that the Water Plan may include the State's endorsement of some specific water projects. We strongly oppose this. Water projects of any kind – storage, diversion, treatment, re-allocation or any other category – must be reviewed and permitted, or not, in the context of their individual locations, circumstances and impacts and with the full participation of those members of the public who may be affected by the project. Any pre-judging of the value or feasibility of any project in the body of the State Water Plan would inevitably taint the review process and undermine the

legitimacy of even the most deserving project. The Plan, and the various Basin Implementation Plans will list 'Previously Approved Projects' as a way of acknowledging those projects which have already gone through an appropriate review process. The Plan should not contain any other designation of projects as being more or less favorable.

Finally, we want to reiterate our recommendation that the Plan adopt the highest possible goals in regard to conservation, re-use and efficiency. It has been shown that conservation of existing water supplies is, by far, the most economical and least impactful of all of the alternatives available to meet Colorado's future water needs. There is virtually no downside to adopting the most stringent conservation measures in comparison to any of the alternative means of producing usable water. Conservation goals should extend to assuring that Colorado's existing water supplies remain clean and uncontaminated by natural or man-made actions.

Thanks for the opportunity to provide comment on the Colorado Water Plan.

Yours truly,

Mark Fuller, Director
Ruedi Water and Power Authority
238 Fawn Drive
Carbondale, Co 81623
(970) 963 4959
fulcon@comcast.net

PUBLIC INPUT ITEM 146

MIDDLE PARK WATER CONSERVANCY DISTRICT

POST OFFICE BOX 145
GRANBY, COLORADO 80446
September 16, 2015

Mr. James Eklund, Director
Colorado Water Conservation Board
1313 Sherman Street, Suite 721
Denver, CO 80203

Re: Comments, July 15, 2015, Colorado Water Plan–Second Draft

Dear Mr. Eklund:

At a recent meeting of the Board of Directors of Middle Park Water Conservancy District, the Board determined it would be appropriate to submit some limited comments on the Colorado Water Plan. The Board is cognizant that many other entities have submitted comments, many of which concur with the positions held by Board of Directors of Middle Park Water Conservancy District concerning the Colorado Water Plan. However, the Board thought that, on a general basis, it would be useful to note a few of the its concerns.

First of all, the Board would be remiss in not pointing out that second draft of Colorado Water Plan is one of the best that has been generated in Colorado addressing the many issues involving Colorado's future water planning. Likewise, the Board would like to commend your staff and you for an exceptionally comprehensive and instructive presentation of Colorado's past and future water situation.

Middle Park's comments are to a large extent based upon information that may be generated in the future.

The Board's comments are as follows:

1. The Southwestern Water Conservation District has pointed out that with the continuing concern about the lack of available water supply in the Colorado River Basin, the State needs to look seriously at other alternatives such as imports from the Missouri Basin. For example, Kansas has looked at a pipeline from the Missouri River. The Board agrees with the position expressed by Southwestern Water Conservation District that the State needs to look seriously at other alternatives such as imports from the Missouri Basin.

2. The recent criticism of the complete lack of California's planning for its drought has raised additional concerns about what would happen in Colorado with that type of prolonged severe drought. The Board feels that lessons from the 2002 drought haven't made it into the conservation section of the plan and would note that comments from an employee, of one of the best managed front range water providers in 2002, indicated that another year like 2002 would lead to the total restriction on use of watering for lawns. In

other words, we are not as far removed from California's situation as people would think, nor have we discussed the need for appropriate legislation in the event of such an occurrence.

3. At the start of the HB1177 process, it was felt that there were adequate water supplies for a potential Transmountain Diversion. The Colorado Water Supply Study, Risk Management discussions, as well as the recent Bureau of Reclamation study of water supply in the Colorado River Basin have increased the questions regarding available water supply. Tied into that issue are not only concerns about the status of water levels in Lake Powell but also power generation issues at Lake Powell. In summary, the concerns of the West Slope with respect to water availability have increased, not decreased, which is stated in the terms of Paragraphs 1, 2 and 4 of the "Conceptual Agreement" attached to the Plan. Additionally, when the IBCC addressed the No/Low Regrets scenario the level of those concerns wasn't at the stage they are today. The Board would reiterate the importance of agriculture in Colorado and would emphasize that not only is it important for a number of the reasons that are enumerated in the Plan but it is also a quality of life issue as well as a cultural issue since many of the attributes that we value including self reliance are imbedded in agriculture as it was passed down from the pioneers who settled Colorado.

4. Chapter 6.3 on Conservation and Reuse is particularly instructive and includes a lot of the work that was done by staff of the CWCB on Best Management Practices. The approach is good but it seems like whether we are looking at Las Vegas, El Paso or California, Colorado's ability to address a significant drought will require additional efforts.

5. Chapter 6.4 details recent legislation that allows for or increases the likelihood of ATMs. While it may be too early to judge the effectiveness of those provisions, other provisions should be looked at to incentivize maintaining agricultural such as evaluation of loan programs, analysis of impacts on transfers and perhaps creation of an Ombudsman to promote and encourage agriculture as well as find revenues such as grants to assist agriculture.

6. On Page 313, the Windy Gap Firming Project is mentioned as an example of Interbasin Projects. While it is a good example, it needs to be pointed out that the Windy Gap Firming Project needs to be looked at in conjunction with the Windy Gap Agreement that provided other benefits such as compensatory storage for the West Slope and maintenance of in-stream flows and the Windy Gap Firming Project Agreement is designed to compliment the earlier agreement.

7. The Seven Points from the "Draft Conceptual Agreement" are found on Page 318, as well as an attachment. It is important to note that the Colorado River Roundtable has raised some issues as to the Seven Points. Importantly, in Middle Park's estimation, Points One and Two need to be read to not to adversely impact the West Slope including preventing a TMD from purchasing West Slope water rights to increase the yield of a TMD. Also, Point 4 is important in that without an insurance policy with our present knowledge of water availability on the Colorado River under the existing and projected analysis it is

clearly important that the existing users and a small portion of West Slope needs has to be provided for before consideration is given to a future TMD.

8. The financing provisions on Pages 333 through 340 are a good analysis of possible financing alternatives. However, what is missing is any analysis of feasibility of any TMD. The Middle Park Board feels that the only project that was looked at by the CWCB in any level of detail was the Big Straw Project which involved pumping from the vicinity of Grand Junction to the East Slope. Other potential projects haven't been looked at in detail but those involving a TMD from the Colorado River could be prohibitively expensive and involve huge environmental, engineering and permitting concerns. Overall, the cost of a new TMD would dwarf the available funds and it is next to impossible to determine whether the voters would ever approve such a proposal which could well be in the tens of billions of dollars versus the proposal on Amendment A.

9. Tying into the overall process is just a question of why the entirety of the State should be involved in financing a project whose primary benefits are going to be with the entities that need the water. Precious little has been heard about the formation of an entity such as was done with Northern (understanding that it was a different time and federal money) that could finance such a project.

In conclusion, the Middle Park Water Conservancy District thinks the study is very good but one of its significant weaknesses, because the foundation hasn't been laid as of yet, is determining an entity to finance a project, the overall cost and feasibility of any project from the Colorado River Basin, let alone whether there is any water available even under the Seven Points in the framework.

Very truly yours,

Duane Scholl

Duane Scholl, President
Middle Park Water Conservancy District

PUBLIC INPUT ITEM 147

FRONT RANGE WATER COUNCIL

1600 West 12th Avenue
Denver, CO 80204-3412

September 15, 2015

Colorado Water Conservation Board
1313 Sherman Street, Room 721
Denver, CO 80203

RE: Comments on Colorado's Water Plan

Dear Board Members:

Introduction

On both August 8, 2014 and April 30, 2015, members of the Front Range Water Council (Denver Water, Aurora Water, Colorado Springs Utilities, Northern Colorado Water Conservancy District, Southeastern Colorado Water Conservancy District, Twin Lakes Reservoir and Canal Company, and Board of Water Works of Pueblo), hereinafter FRWC, submitted observations and recommendations on a preliminary draft of the Colorado Water Plan. A copy of those two submissions is attached hereto. Although some of the FRWC observations and recommendations were reflected in the most recent draft of the Plan, including in some of the identified "Recommended Actions", other concerns were only partially addressed at best. That being said, the FRWC recognizes that CWCB staff has limited time and resources to devote to further modifications of the Plan, and hence this set of comments is focused on a few select topics. The FRWC thanks CWCB staff and the Board for their dedication and hard work on the Plan to date.

The FRWC comments cover four primary topics.

1. The appropriate role of water conservation and storage in meeting the gap.
2. Relief from project permitting hurdles, including a discussion of the "state" role in project development.
3. A potential approach to the identification and implementation of appropriate funding options.
4. Inclusion of the Conceptual Framework as part of the Plan.

Preliminary Observations

Before specifically addressing the topics listed above, the FRWC offers two preliminary observations.

First, there appears to be a lack of balance in how the draft Plan addresses "urban" water challenges versus other water supply needs. The Introduction to the Plan portrays urban water needs and associated urban growth as solely negative factors, while other water uses, e.g., agricultural or environmental, need to be protected and fostered. This is the case despite the positive social and economic impacts associated with maintaining prosperous urban communities. For example, on page 1 of the Introduction, reference is made to "continued rapid removal of water from farms and ranches to supply urban growth," "a blind hope that basin economies, watersheds and ecosystems can withstand more water diversions," and the "continued mining of groundwater aquifers to supply municipal growth." It is no wonder that this draft has caught the attention of local Front Range mayors and homebuilders who have expressed concern over its negative tone.

The CWCB must keep in mind that those urban entities who do acquire agricultural water do so in a free market system, with the farmer or ditch company voluntarily placing the water for sale; that new urban water supply projects face a long list of very costly permitting hurdles and mitigation requirements that often address not only the projects' direct impacts, but also the impacts of "past" projects with which the current projects have no association; and that urban entities who were historically dependent on groundwater are diligently undertaking efforts to identify appropriate renewable supplies, e.g., the WISE partnership. Thus, the draft Plan should be revised to eliminate the negative connotation surrounding urban water use and to reflect the positive cooperation that the many diverse stakeholder groups have tried to engender when dealing with these complex problems.

Second, and perhaps more importantly, the FRWC is concerned that the Plan, when viewed in its entirety, may have begun to focus too much on the "trees", while ignoring the "forest". The Plan provides background on existing water supply and demand data (though some of the data is in need of revision), including that information collected through the BIPs. It has also undertaken an initial examination, in Chapters 9 and 10, of funding options, and identified a Critical Action Plan. However, the Plan could be greatly enhanced by adopting, in appropriate places throughout the Plan, more of a "big picture" or statewide approach on those matters that require a common, long-term vision. It is not enough to highlight the looming crises; there must be a focused future plan of action. This is particularly important as the stakeholders turn to the "implementation" phase of the Plan.

For example, recently there was discussion before the IBCC of implementation steps, with the suggestion by some that the BIPs already provide the implementation blueprint. The BIPs will certainly

be important in the identification of those projects and processes necessary to fill the consumptive and non-consumptive use gaps. However, state leadership will be required for the overall approaches to water conservation metrics, watershed planning, permitting, funding, water quality protection, water rights administration, and even multi-purpose project development with "public benefit" components.

Confounding the implementation efforts will be the apparent inconsistencies between the various basin plans. This is not to say that the FRWC advocates a one size fits all approach to addressing site specific, on-the-ground water supply issues. Creativity and flexibility must be fostered. Nevertheless, a "Colorado" Water Plan must also establish a basic statewide framework that takes into account the social, economic, environmental and legal consequences of how water resource needs are to be met for the state as a whole. It is the state that must be the advocate for this consistent statewide vision.

1. Conservation and Storage

The FRWC believes that the "conservation" train may have been temporarily driven off the tracks in a desire to establish measurement metrics or "stretch goals," while losing sight of the overall objective, i.e., the maximum utilization of existing water resources. As with the Basin Plans, there can be no "one size fits all" conservation plan. Fortunately, it appears that the "stretch goal" debate has abated as a consequence of the adoption of compromise language. The dialogue can now be more productively framed in terms of "optimization" and "efficiency of use" rather than simple percent reductions at the headgate or the tap or overall a/f of savings.

Colorado is "consumption limited" by our interstate obligations, and therefore we must recognize this limit in all conservation discussions. To achieve the objective of maximum utilization, it may initially be necessary to establish a "water balance" in each basin, thereby ensuring that downstream delivery obligations will continue to be met. This could potentially be accomplished in coordination with the SWSI 2016 efforts. At that time, the variety of use data, which should already be available through the BIPs, can be reviewed to determine how water can best be utilized, in accordance with governing law, on an area-wide or basin-wide basis to optimize the existing resource. Urban outdoor use accounts for less than 4% of total water use in the state, and hence is not a large component of future demand. Nevertheless, it should be part of the discussion of how multiple parties in the basin (urban, agricultural and recreational/environmental) can maximize the use of existing supply while incorporating other available new sources to the extent necessary.

The Plan should reject the notion that project approvals should be contingent of first meeting any sort of conservation goals or targets. Passive and active conservation savings occurs over time as a result of technological innovation, education, market penetration, and other factors and as a result, does not

naturally lend itself to being "sequenced" ahead of other water supply options. A better approach is to conduct integrated water planning where supply and demand management are considered in tandem and multiple water supply solutions are pursued simultaneously, with the acknowledgement that just as new water projects take years to plan and implement, conservation savings are also achieved gradually over time.

For example, the WISE project maximizes the use of Denver and Aurora's re-useable return flows in the South Platte basin by recapturing in-house and irrigation return flows downstream and placing them back in the potable system. This allows both Denver and Aurora to firm up their water supplies without the need for new agricultural transfers or transbasin diversions, while sharing periodically available excess supplies and delivery capacity with the members of the South Metro Water Supply Authority who are currently dependent on non-renewable groundwater. Thus, more efficient use is accomplished by means other than further reducing municipal and industrial use on a gpcd basis. That approach has carried much of the burden to date in reducing demand, but cannot be the primary solution to the problem.

Similarly, many ATM projects incorporate a focus on basin efficiency or maximum utilization rather than typical conservation measurement metrics. Interruptible supply arrangements allow agricultural water, the supply of which may be inadequate to meet crop needs in a given year, to be sold to cities in the basin that need it to meet immediate drought demands or post-drought storage refill requirements. This provides a source of income for the farmer and helps to keep the agricultural land in production over the long term, while maximizing both the beneficial use of the supply and its economic returns, urban and rural, in the basin. At the same time, there are many situations where cities are able to lease temporary excess supplies to meet agricultural needs. The state should endorse this type of "optimization" as the centerpiece of its conservation policy and promote its use.

As previously noted by the FRWC, the Plan should also specifically acknowledge that urban dwellers are entitled to a "reasonable recreational experience" in the environment in which they reside. This includes adequate irrigation supplies for yards, public parks, recreation fields, open space, etc. Many urban citizens, including those of limited economic means or physical limitations, or those who simply are not kayakers, fisherman, backpackers or skiers, engage in enjoyable outdoor recreational activities "in their own backyard". The availability of such landscapes enhances their quality of life and is a significant factor in maintaining the economic engine represented by urban area. Such facilities are also important in preventing the development of unwanted "heat islands" and in maintaining water quality.

Finally, the Plan should acknowledge that additional storage is a very important component of the future water supply strategy if the state hopes to meet its water efficiency objectives, as well as the other "gap-filling" strategies. In keeping with the "optimization" theme, such storage, which can be part of a multiple party/multiple use project, is necessary not only to the future utilization of conserved water, but to adequately: (i) respond to the challenges presented by climate variability, capturing water when it is available; (ii) control flood events, where storage not only provides safety and welfare flood protection, but water quality protection; (iii) promote reuse through recapture and recycling; (iv) manage compact waters to meet downstream delivery obligations; (v) and firm up municipal supplies and thus reduce the need for agricultural transfers. Chapter 10 of the Plan must therefore emphasize the need for "new" storage as well as the expansion of existing facilities, and the state must advocate for policies that advance this end.

2. Project Permitting and the State Role

The FRWC appreciates the work performed to date in identifying areas where earlier and more coordinated agency efforts, including between local, state and federal entities, may facilitate the completion of project permitting. The FRWC also endorses the use of the LEAN process to advance this efficiency goal. Nevertheless, the FRWC finds the draft Plan to have fallen short in the identification of other important areas where it believes progress could be made. It should be noted that "state endorsement," which would oftentimes come, if at all, very late in the permitting process, may not be of greatest value to project proponents. Rather, it is a more timely, transparent and cost effective permitting process, in which all state agencies coalesce around policies promoting Plan goals, that is of greater future importance. In addition, where appropriate, an actual state ownership interest in project development and operation can also be a catalyst in the efficient completion of permitting obligations.

The FRWC proposes that the Governor, having solicited and reviewed input from the CWCB which, in turn, has considered stakeholder comments, issue an Executive Order that: (i) indicates that the CDPHE should expeditiously complete its section 401 certification duties on water supply projects, not waiting for a final section 404 Army Corps Record of Decision or a FERC license approval (acknowledging that the risk of rejection of the preferred alternative rests with the Applicant); (ii) establishes, in coordination with the Attorney General's Office, a coordination process among all involved state agencies, including Parks and Wildlife, Colorado Water Conservation Board, Department of Public Health and Environment, and the State Engineer's Office; (iii) requires that when the aforementioned state entities adopt and implement legal, legislative, regulatory or policy positions, they take into account their potential impact on the efficient and effective development and utilization of water resources (examples provided below); (iv) commences a state-wide dialogue on how local

control can continue to be honored in the context of the identification and construction of necessary water supply projects, while nevertheless promoting the completion of water supply projects of statewide concern and importance, (a process not unlike the recent dialogue over oil and gas development); and (v) while not endorsing any specific structural or non-structural water projects, acknowledge state support for the planning, funding and completion of such projects in a timely manner.

With reference to state agency consideration of Plan objectives throughout their decision making processes, guidance on the type of language that may be useful can be found in state statutes. For example, the state Water Quality Control Act indicates that the General Assembly intends for the Act to be construed to require the development of a program "in which the water quality benefits…have a reasonable relationship to the economic, energy and public health costs and impacts of such measures…." C.R.S. § 25-8-102. It goes on to state that "the Commission and Division shall consult with the state engineer and the water conservation board or their designee before making any decision or adopting any rule or policy which has the potential to cause material injury to water rights." C.R.S. § 25-8-104.

State agencies currently develop rules or policies that bear upon many water development and use decisions, including: (i) what constitutes allowable "re-use" or recycling practices; (ii) the ability to re-use water left in the basin of origin by a transbasin diverter; (iii) the prioritization or order of use of multiple decreed rights in the same ditch system; (iv) the relationship of stormwater detention on downstream water rights; (v) the nature of watershed restoration activities; (vi) planning for threatened or endangered species or species of concern; interpretation of water rights decrees and participation in water court applications ; and many other topics where it appears that there has been little or no consideration given to the impact of the state's position on the ability to responsibly close the water supply gap. Statutory, regulatory or policy interpretations that would promote flexibility in water supply development are often times replaced by rigid pronouncements that appear to be made without consideration having been given to their relationship to the larger water supply picture. An Executive directive similar to the language found in the Water Quality Control Act could help ensure a more thoughtful and coordinated decision making process. This is not to say that the agencies, for one reason or another, might not still reach the same conclusions as they have in the past, but at least they will have done so after a more thorough and hopefully transparent analysis of the consequences.

The FRWC would also call staff's attention to the "keystone principles" identified on page 2 of the FRWC's April 30, 2015 comments. The FRWC believes that the adoption of these principles could help guide state policy making and encourage constructive efforts towards filling the water supply gap.

Finally, the FRWC repeats its request that the Plan reflect an actual state ownership role in the identification, construction and operation of multi-benefit projects, be they new projects or previously identified IPPs. This would hopefully assist in facilitating the completion of the permitting process, while also ensuring that environmental and recreational project components of statewide benefit reflect a state investment therein. Unfortunately, the current practice is to try to place the total cost burden of statewide benefits on project proponents, utilizing the permitting process as the leverage, even if the demanded public benefits have little correlation with project impacts. Working together, with an active state role, all parties can better advance such environmental and recreational objectives.

3. Identification of Funding Solutions

The FRWC appreciates the efforts of CWCB staff and IBCC funding committee in the identification of a number of potential funding options. The FRWC agrees that it may be premature to take any of those options off the table at this time. That being said, all parties must have realistic expectations regarding what revenue sources can be made available, especially where voter approval is required. The adoption of some of the identified proposals would require a very strong state role and the endorsement of many key stakeholder groups. This aside, the Plan also needs to acknowledge that many water supply entities, including members of the FRWC, have recently raised their rates a significant amount, with other increases on the horizon, in order to construct necessary water supply projects, e.g., SDS, Prairie Waters, Moffat. etc. Some of the funding options, e.g., container fee, severance tax, sales tax, etc. could be perceived by ratepayers who are already funding the aforesaid projects as a request that they now pay for improvements to the systems of others or for in-stream benefits that inure primarily to others. In any such effort, education and outreach will be key in explaining to the public how "new" revenues will cover the costs of completing important environmental/watershed protection tasks of direct benefit to them, as well as recreational amenities that are important to the state as a whole, but that are currently underfunded.

Further, Chapter 10 cannot simply identify ways to raise money. The revenue options must be coupled, in the same chapter, with at least some explanation as to "why" the money is needed, what specific projects are included in the estimated multi-billion dollar demand figure, and what projects or types of projects would specifically be funded if one or more of the revenue approaches were adopted.

4. The Conceptual Framework

In its April, 2014 comments, the FRWC expressed support for what was, at the time, a fairly short and concise recitation of seven principles governing future transbasin diversion discussions "assuming that

they constitute, and are treated, as an integrated package of concepts which facilitate the future development of additional Colorado River water…." Since that time, efforts were undertaken to "fill in the details" on the principles. Unfortunately, that effort simply led to more confusion and consternation because the principles appeared to expand beyond TMDs, and the explanation of the principles contained ambiguities that left parties unsure of their future interpretation, e.g., was the "sequencing" of the four legs now being endorsed, a position which the FRWC has always rejected.

Nevertheless, aware of these concerns, the CWCB staff worked with the interested parties and the IBCC members to close the philosophical gap, so that the Conceptual Framework could be referenced in the Plan. While the FRWC continues to believe that the inclusion of the original seven principles would suffice and constitute a fair outcome at this point in time, in light of the introductory language recently adopted by the IBCC, the FRWC will not oppose inclusion of the Framework in the Plan. It is important to note, however, that the FRWC believes that all parties must recognize that the current draft of the Framework is just a work in progress that may be further modified as the dialogue continues. As Board member McClow stated in his remarks at the summer CWC convention, the Framework has no regulatory force or effect. Rather, it is guidance, the implementation and use of which will depend on the positions taken by the parties who engage in good faith negotiations on the construction of future specific proposed projects. A statement to this effect should be included in the Plan.

Finally, though only indirectly related to the Conceptual Framework, the FRWC notes that relative to both existing and future TMDs, as well as other pre- and post-compact diversions within the state, the state must develop a policy governing the future administration of Colorado River water diversions. It should be designed to ensure that a compact delivery shortage does not develop on the Colorado River or, if it does, describe exactly how Colorado would administer water rights in light of its constitutional and statutory scheme. Preliminary analysis has been conducted on the use of both "pro-rata" and "priority" administration concepts, and this legal/technical/socio-economic dialogue needs to continue in the near term. Obviously, this will entail a discussion with other Upper Basin states. Whether this is something that can or should be part of an Executive Order is a question that the FRWC will defer to the CWCB. However, at the very least, it should be identified in the Plan as one additional "Action Step".

Conclusion

The FRWC appreciates the opportunity to offer these comments on the latest draft of the Water Plan and applauds the great amount of effort devoted to Plan development by state staff and the Board. The FRWC recognizes the amount of additional effort that will be associated with Plan implementation, and stands ready to assist.

Sincerely,

FRONT RANGE WATER COUNCIL

Aurora Water
Colorado Springs Utilities
Denver Water
Northern Colorado Water Conservancy District
Pueblo Board of Water Works
Southeaster Colorado Water Conservancy District
Twin Lakes Reservoir and Canal Company

cc: James Eklund, CWCB
Becky Mitchell, CWCB

PUBLIC INPUT ITEM 148

WESTMINSTER

September 17, 2015

James Eklund
Director, CWCB
1313 Sherman Street, Room 721
Denver, Colorado 80203
cowaterplan@state.co.us

Re: Comments from the City of Westminster on the July 7, 2015, draft of Colorado's Water Plan

City of Westminster
Office of the
Council

4800 West 92nd Avenue
Westminster, Colorado
80031

303-658-2006
FAX 303-706-3921

Dear Mr. Eklund:

We appreciate the opportunity to provide feedback on the July 7, 2015 draft of Colorado's Water Plan. Westminster staff have been actively engaged in the development of Colorado's Water Plan, including having a representative on the Metro Basin Roundtable for two years. We believe this is an important time in the history of Colorado's water management and we desire to keep this very important conversation going.

We believe that the draft plan aligns with the original 2013 Executive Order mandate to support "vibrant and sustainable cities" and "efficient and effective water infrastructure promoting smart land use." We are pleased to see the plan does not weaken our position as water rights owners and municipal water users. We had some early concerns about discussions of curtailing "buy and dry" because that could have equated to a fundamental and detrimental change to water markets, potentially diminishing the value of agricultural water rights. Because of water's tremendous worth and necessity, we do not support Action #12, on page 241 of the draft plan, as it is written. We encourage CWCB to host a stakeholder group to provide input prior to any discussion of a framework for evaluation of agricultural transfers.

The introduction of the document sets the tone for those reading the plan. We do not agree with the content or tone of the introduction in the latest draft. For example, there is a statement that Colorado communities are "striving to recreate the water-intensive landscapes of the Eastern U.S. instead of adopting a Western water ethic." In our experience, our communities do plan for sustainable and beautiful landscapes that are appropriate for our climate, and data proves that our citizens are on a trend of reducing outdoor water use today. Sustainable landscapes in Colorado can responsibly include a mix of turf and xeric plantings. In fact, water-wise landscapes are a critical component of Westminster's water supply planning. They give us the needed flexibility to balance water supply and demand in wet, average, and dry years. We also object to language such as "blind hope" and "out of touch with changing needs," when referencing the current policy and planning around Colorado's water supply. The introduction needs to be rewritten, and we support the Metro and South Platte Basin Roundtable's specific comments on this issue.

We are aware of concerns about the statewide stretch goal suggested for municipal water conservation. Westminster is a leader in conservation, and we have already realized significant reductions in water demand from conservation practices. We don't object to the 400,000 acre-foot stretch goal at the state level; however, this goal needs to be applied equitably across a diverse group of water providers. Each utility in the state is somewhere on a continuum of adopting best practices and implementing conservation. Some are much further along than others. Utilities that have not aggressively pursued conservation programs will have an easier time meeting a quantitative goal than those that already have mature programs. It would be

inappropriate to apply one standard to all water providers in order to force progress toward a statewide stretch goal.

We see the most important addition in the July 7, 2015, draft is a new Chapter 10, titled "Critical Action Plan." The following comments are specific to Chapter 10.

- We recommend the addition of another Critical Action to achieve conservation goals: the development of a certification and ongoing training program for landscape/irrigation professionals. They comprise the human infrastructure that drives success or failure in achieving conservation goals at the ground level. With 50% of Colorado's M&I water going to outdoor uses, we need high-performing professionals who manage landscaping and irrigation in order to meet the goals of this plan.
- There are goals for providing funding for education, which is positive. With funding comes requirements for staff time to implement these programs. We would like to see the State offer some statewide education programs that would achieve the same goal but not cost providers additional staff time.
- There is a recommendation requiring water providers to conduct "comprehensive integrated water resource planning using the water conservation best practices at the high customer participation levels where possible, as defined in SWSI." Our city is already at the forefront of integrating water supply and demand in a Comprehensive Water Supply Plan which reflects excellent water resources planning and conservation appropriate for our community and water supply. We do not support establishing additional specific requirements statewide.
- The plan calls for offering tax incentives for outdoor conservation. We would like to see the same for indoor conservation because indoor water use drives planning for sufficient water supply in the driest years.
- Because Westminster is already a leader in conservation practice, the State's overall reduction goal of outdoor irrigation savings of 15% may not be a reasonable quantitative goal on top of savings we have already realized. If the State offers incentives for outdoor conservation at a specific level, we are concerned about the possible loss of local control, and we intend to monitor this discussion of conservation policy closely.
- We are encouraged to see a recommendation for additional funding for the Water Supply Reserve Account grants program. We support the specific recommendations for the use of WSRA funds to support research and innovation for water reuse.
- We strongly support these Critical Actions in particular:
  - Create new programs for public education and communication to raise awareness of water issues.
  - Education and support for integrated water resources and land use planning.
  - Explore a tax credit for homeowners who install efficient outdoor landscapes and irrigation as part of the integrated funding plan.
  - Host a stakeholder process to explore financial incentives for outdoor water conservation measures, such as a tax credit program to incentivize retrofitting higher water landscapes with lower water landscapes and more efficient irrigation systems.
- Chapter 10 also contains Critical Actions that we may support or object to in the future, depending on how they evolve. It is too early to tell, but these in particular we will be monitoring:
  - Investigate the potential for the CWCB to become a project beneficiary through an arranged partnership for projects that are central to fulfilling the goals of Colorado's Water Plan.
  - Establish a state repayment guarantee fund.
  - Modify Colorado's statutes to clearly allow for public-private partnerships for water projects (§C.R.S. 43).

- Determine how Colorado will "endorse" projects for federal permitting, state financial assistance, and other purposes.
- Support the maximum use of water rights by exploring opportunities to create more flexibility for various types of water transfers.
- Explore and support opportunities to increase benefits to environmental and recreational values associated with existing and planned storage and infrastructure projects and methods.
- Work with regulators to modify existing water quality standards to factor in climatic change.

Westminster believes that many of the components of the water plan will be successful only if there is the political will to create more water storage, including identifying new storage locations, expanding existing storage, and encouraging regional storage solutions. A key example is the need to have sufficient storage for water saved through increasing conservation. As pointed out in section 6.3.1 under Benefits of Water Conservation, "water realized through long term water conservation efforts could be stored as a drought reserve to be used during periods of shortages." Not only is this a good idea, it is critical to good water supply planning. Statewide, storage would also enable Colorado to capture more high flows in wet years so we can better weather dry years. Climate variability intensifies the need for storage so we can be resilient in times when snowpack, snowmelt, and precipitation may differ from historical patterns. Colorado's Water Plan must recognize the interconnection between storage and meeting the needs of the future.

Thank you for the opportunity to comment on the draft of Colorado's Water Plan. We look forward to continuing the important conversation about planning for the future of Colorado's water.

Sincerely,

Herb Atchison, Mayor

PUBLIC INPUT ITEM 149

September 17, 2015

James Eklund, Director
Colorado Water Conservation Board
1313 Sherman Street
Denver, CO 80203

Re: Revised Environment Resilience Language for Colorado's Water Plan

Dear Director Eklund:

Audubon Rockies and the undersigned conservation organizations and Colorado Audubon chapters appreciate the opportunity to comment on the second draft of our Colorado State Water Plan. We would first like to thank you, your staff, and contributing agencies for your considerable work and dedication in creating our first Colorado Water Plan.

Below you will find our united comment regarding a proposed revision to the ***Environment Resilience*** language used in Chapter 6.6 and subsequently referenced in the Plan. The proposed revision is intended to provide additional depth, value and demonstrated science to the existing language.

As demand increases on river systems to supply present and future agricultural, municipal, industrial, recreational and environmental needs the language used to frame resilience is pivotal to comprehend potential responsiveness of river resources. While the current language describes resiliency as a system that can bounce back from disturbance and notes the need for measurement, it is a starting point. The proposed language incorporates needed elements of: stream ecology, watershed connectivity, and how human health and well-being are tied to ecosystem integrity. We believe Colorado must at minimum include these factors to build and track resiliency going forward.

Respectfully, we request that you consider and find worthy the proposed language to incorporate into Chapter 6.6.

- **Original Resilience Language (*Chapter 6.6 page 242-243)*:**

Resilience of a stream or watershed can be measured as an ecosystem's ability to recover function after a disturbance, whether acute or chronic[1]. The resilience of an ecosystem is a measure of its ability to absorb changes and still exist[2]. Resilient river systems provide complex and connected aquatic and riparian habitats, and support diverse, abundant, and reproducing populations of aquatic and riparian species. To determine levels of resiliency, it is necessary to identify the baseline status of these characteristics and to monitor streams and watersheds on an ongoing basis[3]. To promote environmental resiliency, planned projects and methods should incorporate the potential stressors of drought and climate change, including decreased supply and changes in runoff timing.

**Footnotes refer to Second Draft Colorado Water Plan citations for existing resilience language.*

[1] Original citation "e" See Principle 7 of the IBCC Draft Conceptual Agreement
[2] Original citation *"f"* See http://torrensresilience.org/ecological-resilience (citing Holling, C.S. 1973. "Resilience and stability of ecological systems" in: Annual Review of Ecology and Systematics. Vol 4 :1-23).
[3] Original citation *"393"* The Nature Conservancy, email message to CWCB with comments on Colorado Water Plan, June 25, 2015.

- **Proposed Revision of Resilience Language:**

Resilience of a stream or watershed can be measured as an ecosystem's ability to recover function after a disturbance, whether acute or chronic. The resilience of an ecosystem is a measure of its ability to absorb changes and return to similar levels after disturbance (McCluney 52). Resilient river systems depend upon dynamic seasonal flows (Bunn and Arthington, Fausch et al., Baron et al., Naiman, Decamps, and McClain) and provide complex and connected aquatic and riparian habitats, and support and sustain diverse, and stable populations of native aquatic and riparian species (McCluney 53). To determine levels of resiliency, it is necessary to identify the baseline status of these characteristics and to monitor stream ecological functions and watershed processes (McCluney) on an ongoing basis (Baron et al., Norris). "Human health and well-being are tied to ecosystem [integrity]" (Naiman 404). To promote environment resiliency, planned P&M should incorporate the potential stressors of drought and climate change, including decreased supply, changes in water temperature, and changes in runoff timing, duration, quantity, and quality (Fausch et al., Baron et al., MacDonnell, Rathburn et al.).

***References for Revised Environment Resilience Language:*

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Sincerely,

Audubon Rockies and our partner organizations:
American Rivers
American Whitewater
Western Resource Advocates

Colorado Audubon Chapters:
Arkansas Valley Audubon Society, membership: 600, Pueblo
Audubon Society of Greater Denver, membership: 2,930, Denver
Black Canyon, membership: 390, Delta
Boulder County Audubon Society, membership: 1,600, Boulder
Evergreen Audubon Society, membership: 399, Evergreen
Fort Collins Audubon Society, membership: 987, Fort Collins
Grand Valley Audubon Society, membership: 470, Grand Junction
Weminuche Audubon Society, membership: 225, Pagosa Springs

These Audubon chapter leaders speak on behalf of eight National Audubon Society Chapters from Colorado, which together represent **7,601** members.

CC:
Linda Bassi, Chief, Stream and Lake Protection Section
Kate McIntire, Outreach, Education and Public Engagement Water Supply Planning Section
cowaterplan@state.co.us

PUBLIC INPUT ITEM 150

September 17, 2015

cowaterplan@state.co.us

To whom it may concern:

West Denver Chapter of Trout Unlimited wholeheartedly supports and commends CTU's statewide comments on the Colorado Water Plan. By incorporating the suggestions by CTU, we believe this Plan, indeed, provide a strategic vision for a productive economy, supporting sustainable cities, a productive agriculture, and a strong and viable environment.

On a more local, parochial level, our Chapter –WDTU – is concerned about the health of its "adopted" river – Clear Creek. Mining contributed to Colorado's glorious history, but left an inglorious legacy- and that was particularly evident on Clear Creek where its waters were turned into mud by countless placer operations set up in its beds and large-scale mining enterprises. The water quality of the main stem of Clear Creek has improved, thanks in large part to treatment plants built in some of the mountain communities along the river and to government-citizen group habitat efforts. However, continued vigilance is needed and additional clean-up work is required. THE North Fork of Clear Creek is basically sterile, completely devoid of insects and fish. There are still mines in the Clear Creek drainage that dump waste into

the water. And, there are miles of unimproved or in some cases, illegal, roads and ATV trails that contribute to the build-up of sediment in the creek. An accompanying problem concerns the I-70 Corridor that parallel much of the main stem of Clear Creek. Every year tons of salt, sand, and gravel from I-70 make their way into Clear Creek, smothering breeding areas, and filling in holes where trout typically reside during the winter months. The Colorado Department of Transportation should and must take steps to address this issue if trout are going to continue to survive on Clear Creek.

Recently Colorado Parks and Wildlife and the Federal Forest Service choose two small streams on the Clear Creek Drainage for the reintroduction of the State fish, the Greenback Cutthroat. These creeks are the first streams in Colorado to have the Greenbacks. To insure the survival of these fish and all aquatic animals and plants in and on Clear Creek water flow as well as water quality must be maintained.

Thank you for the opportunity to voice West Denver Trout Unlimited's input into this very critical water plan for Colorado's future

Sincerely,

Tim Toohey

President WDTU

PUBLIC INPUT ITEM 151

SIERRA CLUB
Rocky Mountain Chapter
1536 Wynkoop Street, Ste 200, Denver, CO 80202 | 303.454.3362 | www.sierraclub.org/colorado

September 17, 2015

James Eklund, Director
Colorado Water Conservation Board
1313 Sherman Street
Denver, CO 80203
cowaterplan@state.co.us

Re: Comments on Second Draft of Colorado Water Plan

Dear Director Eklund:

The Sierra Club applauds the Colorado Water Conservation Board's (CWCB) efforts in drafting a forward-thinking plan to secure Colorado's water future. Indeed, we are encouraged by the direction of the Colorado Water Plan (CWP). We are particularly pleased that the CWP has adopted a municipal conservation goal of 1% per year water use reduction.[1] The Sierra Club strongly believes that demand-side solutions, such as municipal, industrial and agricultural conservation, are necessary to address the widening water supply gap. We would welcome opportunities to work with the CWCB to help achieve the state's conservation goals.

In light of our belief that the CWP is on the right track, the Sierra Club will keep its comments brief and constructive.

First, we urge the CWCB to set stringent screening criteria for any new water project the state endorses. In Chapter 9.4, the CWP endeavors to streamline the permitting of future water projects. We believe that efficiency is an important value. We also believe that process and public involvement safeguard against projects that would have a deleterious effect on public health, the environment, and the economy. In the CWP's own words, "the permitting process ensures the implementation of projects that best meet Colorado's water values—to support vibrant and sustainable cities, viable and productive agriculture, a robust tourism industry, efficient and effective infrastructure, and a strong environment."[2]

[1] A municipal conservation goal of 400,000 acre-feet by 2050 roughly equates to 1% water use reduction per year. We recommend that the CWCB use a percentile conservation goal in public communications. It is our opinion that such terminology will resonate more with a general populace not as knowledgeable about overall water supply figures and metrics.
[2] Colorado Water Plan, Second Draft (CWP) (July 2015), p. 352.

The CWP includes a potential framework for the state to be more "effective and eliminate and reduce redundancies" in the permitting of water projects.[3] At its crux, the CWP proposes state involvement at a significantly earlier stage than present. For instance, whereas state involvement for projects that trigger federal Clean Water Act Section 404 permitting presently occur following (1) the scoping stage, (2) the draft environmental impact statement, and (3) public comment, under the proposed timeline, cooperating state agency involvement would begin after scoping.[4]

In theory, we support the state's efforts to streamline approval and regulatory processes. However, we wish to ensure that the state only supports water projects that benefit our communities, rivers, and economy. This is a delicate balance. Specifically, the Sierra Club has two concerns:

> We are concerned that heavy state involvement prior to the public comment period will short change valuable information typically gleaned during that process. The permitting process provides a valuable tool for local agencies, tribes and citizens to participate in and contribute to discussions on a project's environmental, economic and health and safety impacts.[5] The public can, and often does, provide unique expertise.[6]
>
> State resources are limited. The state should not expend taxpayer money on projects that are not likely to go forward.

Any state involvement prior to advanced stages of federal or state regulatory processes should be governed by a rigorous set of criteria that the project proponent must demonstrate. The state should not partner with water projects, including by providing technical assistance or funding, until the state is near certain the project is appropriate for Colorado. These stringent criteria should include proof that, among other things:

- The benefits of a water storage project cannot be achieved through conservation and reuse;
- There will be monitoring of set water quality standards to protect beneficial uses;
- The project is more cost effective than alternative options;
- The project will adopt relevant best management practices;
- Projects that permanently remove water from the hydrological cycle will pay a premium that will be directed to river restoration and management funding;
- Any negative environmental, health and economic consequences will be avoided.

Ideally, water projects should be publicly evaluated under these criteria before receiving any state support. We are ready participants to help the CWCB formulate these criteria and state review mechanisms.

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[3] *Id.*
[4] *Id.* at 364, Figure 9.4-2 (State Involvement in Federal 404 Permitting Process).
[5] *See* Environmental Law Institute, *NEPA Success Stories: Celebrating 40 Years of Transparency and Open Government* (Aug. 2010), p. 5 (discussing the positive impact of the NEPA permitting process).
[6] *Id.* at 6.

Second, we urge the CWCB to identify and secure additional sources of funding for river restoration and management. We believe that the $1 million currently allocated to stream management plans (SMP) is inadequate to provide strong oversight for maintaining tens of thousands of miles of Colorado's river system.

As aptly described in the CWP, SMPs provide a "framework for maintaining healthy stream systems while also protecting local water uses and planning for future consumptive and nonconsumptive water needs. SMPs identify environmental and recreational flow needs and assist in identifying areas where historical alterations of stream flows most likely affected the ecological resource conditions." [7] In short, SMPs provide a valuable tool for local actors to assess and manage stream conditions.

We recognize the CWCB's effort in securing $1 million in the 2015 legislative Projects Bill. We also understand that the CWCB is working on guidance for a SMP grant program. These are important steps to securing sufficient funding for healthy, locally managed rivers. However, there remains an imbalance between funding allocated to water projects and healthy river management. As the CWP discloses, the CWCB recently provided $200 million for several water storage projects.[8] The CWP acknowledges the need for $2-3 billion in river restoration funding,[9] yet current funding for river management techniques like SMPs do not compare to these storage projects.

Strong and flowing rivers are essential for fish and wildlife, as well as recreational activities like fishing and kayaking. The river recreation economy alone is a $9 billion industry. SMPs can do much to protect Colorado's river health and flow levels and maintain the vitality of a critical industry to the state. The CWP should do more to help fund SMPs.

Thank you for your consideration.

Sincerely,

Will Walters
Executive Committee, Chair
Sierra Club Rocky Mountain Chapter

Christopher Raftery
Water Resources Committee, Co-Chair
Sierra Club Rocky Mountain Chapter

[7] CWP at 143 (citing SGM, *Colorado Basin Implementation Plan* (Glenwood Springs: Colorado Basin Roundtable, 2014)).
[8] *Id.* at 329. These projects include the Chatfield Reallocation Enlargement Project, the Animas-La Plata Project, the Rio Grande Cooperative Project, and the Elkhead Reservoir Enlargement Project.
[9] *Id.* at 331.

SIERRA CLUB

Rocky Mountain Chapter

1536 Wynkoop Street, Ste 200, Denver, CO 80202 | 303.454.3362 | www.sierraclub.org/colorado

September 17, 2015

James Eklund, Director
Colorado Water Conservation Board
1313 Sherman Street
Denver, CO 80203
cowaterplan@state.co.us

Re: Comments by Sierra Club Members to Second Draft of Colorado Water Plan

Dear Director Eklund:

Please find herein comments by Sierra Club Rocky Mountain Chapter members to the second draft of the Colorado Water Plan. The views expressed are those of the respective members and not the Sierra Club.

Sincerely,

Will Walters
Executive Committee, Chair
Sierra Club Rocky Mountain Chapter

Christopher Raftery
Water Resources Committee, Co-Chair
Sierra Club Rocky Mountain Chapter

Ms. Lisa Hanckel
2890 Dartmouth Ave
Boulder, CO 80305-5220
(720) 310-0032

Aug 15, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan implementation

Dear John Hickenlooper and Water Board Members,

Please be more specific and comprehensive in this bill including careful screening protocol of new water projects, funding for stream management and restoration. Implementation specifics are needed for this bill to have impact.

Sincerely,
Ms. Lisa Hanckel

Mrs. Susan Llewellyn
26204 E Frost Pl
Aurora, CO 80016-2573
(931) 244-4306

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Conservation Essentials

Dear John Hickenlooper and Water Board Members,

PLEASE!
Allocate resources to assess and protect our rivers.
Modernize agricultural water use and water sharing agreements.

Sincerely,
Mrs. Susan Llewellyn

Mr. Richard Johnston
1532 W Lake St
Fort Collins, CO 80521-4423
(910) 274-6450

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: The Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Clear action must be taken.

Sincerely,
Mr. Richard Johnston

Dr. Jo Jones
100 Village Ln
Carbondale, CO 81623-2340
(970) 424-1368

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Water Diversion

Dear John Hickenlooper and Water Board Members,

Please do not take more Western Slope water and divert it to Denver and its suburbs. Enough is enough.

Sincerely,
Dr. Jo Jones

Mrs. Sara Parks
4810 Nightingale Dr
Colorado Springs, CO 80918-8596

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Protect our water

Dear John Hickenlooper and Water Board Members,

Please don't ignore our water, especially given the recent incident with the dam breaking and the mine contamination. This could become a real issue where our water is no safer than other states like New York or Texas. We have the privilege of good, clean water and don't scree that up.

Let us keep our water rights and not funnel it to other states, except in times of utter necessity.

Sincerely,
Mrs. Sara Parks

Ms. Jenny Douglass
4621 W 31st Ave
Denver, CO 80212-1628
(303) 477-0092

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Suggestions for the Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Thank you for your work on the Colorado Water Plan so far.
Please make the current water plan even stronger by:
Including implementation specifics for the urban conservation goals.

Adding more funding for stream management and restoration.

And listing out specific screening criteria for new water projects so that projects move forward only if they benefit our communities, rivers and agriculture.

Sincerely,
Ms. Jenny Douglass

Mrs. Theodosia Southern
7197 Mount Meeker Rd
Longmont, CO 80503-8620
(303) 516-9387

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Protecting Our Colorado Water

Dear John Hickenlooper and Water Board Members,

Thank you for taking action up protect our precious Colorado water. If we want our kids, grand kids and the next 7 generations to enjoy good health and quality of life, this is a moral imperative for all of us.

The annual sum allocated for stream and river management and restoration ($ 1m) is not adequate. It is vital that the funds allocated for water conservation increase to provide adequate management of our water ways.

Thank you for protecting out most precious water resources!

Sincerely,
Mrs. Theodosia Southern

Mrs. Dorothy & Richard Chamberlin
2010 Parkview Blvd
Colorado Springs, CO 80905-7632
(719) 686-0588

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: STOP POLLUTING OUR WATER

Dear John Hickenlooper and Water Board Members,

We must stop the wasting of water like poisoning the water forever from fracking. We don't need old antiquated dangerous polluting fossil fuels as they are accelerating the destruction of our environment and hastening Climate Change. We have to protect our precious water or we will be in even more dire straits than we are now.

Sincerely,
Mrs. Dorothy & Richard Chamberlin

Mr. Jerry Mcneilly
120 Riley Ct
Loveland, CO 80537-3306
(970) 541-0126

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Final Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

I have taken the time to read about the plans for Colorado's water needs. I am greatly concerned that the environment and wildlife have not been given appropriate considetation.

I ask that the Rocky Mountain Chapter of the Sierra Club be given a key role in the future plans.

Thank you for reading my comments.

With regards,

Jerry McNeilly

Sincerely,
Mr. Jerry Mcneilly

Mr. John Anderson
PO Box 144
Laporte, CO 80535-0144
(970) 407-9076

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: nations Water Plan

Dear John Hickenlooper and Water Board Members,

holistically plan for seven generations and all species. Stop using water for fracking and wells for waste. That is nature's water storage facilities. No more above ground reservoirs.

Sincerely,
Mr. John Anderson

Mr. Wayne Wathen
6426 Silver Mesa Dr Unit D
Highlands Ranch, CO 80130-5887

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Working for the Future

Dear John Hickenlooper and Water Board Members,

We are very vulnerable to the same type of drought that is going on in California with all the reservoirs drying up. We need to start immediately to plan for this. Thank you.

Sincerely,
Mr. Wayne Wathen

Ms. Gail Henry
163 S Vance Ct
Lakewood, CO 80226-2057
(303) 860-1895

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado's Pending Water Plan

Dear John Hickenlooper and Water Board Members,

Admit that we don't have the water to support the issuance of unlimited, new water permits to developers looking to make a fortune in Colorado! Building up instead of.building out would be a good concept with which to start curbing water usage.

Sincerely,
Ms. Gail Henry

Mr. DAVE Cruz
2009 Outrigger Way
Fort Collins, CO 80524-6701
(970) 218-5937

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Usage and Conservation Commitee

Dear John Hickenlooper and Water Board Members,

Colorado needs to address the issues of growth in Colorado, drout and acidents in waterways before allowing the use of water to out pace supply. Demand will continue to grow and only being conservative will protect our future.

Sincerely,
Mr. DAVE Cruz

Ms. Pam Ferman
PO Box 467
Ouray, CO 81427-0467
(970) 275-6064

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plans

Dear John Hickenlooper and Water Board Members,

Please keep Colorado wild water wild and protected against pollution, mining and development

Sincerely,
Ms. Pam Ferman

Mr. Joseph Klein
1503 Yarmouth Ave
Boulder, CO 80304-0564
(303) 875-1824

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado water

Dear John Hickenlooper and Water Board Members,

We need clean water. The mistakes that occur can make our water undrinkable. The people at EPA have got to be more careful. The spill that occurred 2 weeks ago points to that fact enough was not done to protect the water and the people from contaminated water.
The water plan needs to:

* Allocate resources to assess and protect our rivers.

*Set a statewide municipal water conservation goal of 10% by 2020.

*Modernize agricultural water use and water-sharing agreements.

*Commit that large new diversions are NOT the answer.

Sincerely,
Mr. Joseph Klein

Ms. Dianne Wells
10970 W Florida Ave Apt 218
Lakewood, CO 80232-4983
(303) 988-5339

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: The Colorado Water Plan Comment

Dear John Hickenlooper and Water Board Members,

Ban fracking now!

Sincerely,
Ms. Dianne Wells

Mrs. Sandra Murray
2910 N Powers Blvd # 432
Colorado Springs, CO 80922-2801

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Future of water use in Colorado

Dear John Hickenlooper and Water Board Members,

(1) Substantial funding for stream management and restoration is needed. Only $1 million has been allocated for stream management plans. That amount is simply inadequate to productively manage tens of thousands of miles of Colorado's rivers.

(2) The plan sets a common-sense urban conservation goal of approximately 1% per year water use reduction. To achieve this important goal, infrastructure improvements, technological innovations and behavioral changes in Colorado will need to occur. Help the state identify specific measures to encourage more efficient urban use of our limited water resource.

And (3), specific screening criteria for new water projects the state invests in are needed so that projects move forward only if they benefit our communities, rivers and agriculture.

Sincerely,
Mrs. Sandra Murray

Mr. Barry Habermann
2715 Melvina St
Canon City, CO 81212-8817
(719) 275-2056

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water for the future

Dear John Hickenlooper and Water Board Members,

Please do improve and update water conservation/ management in a safe way for the future

Sincerely,
Mr. Barry Habermann

Ms. Lisa Dorr
8850 Whispering Pine Trl
Colorado Springs, CO 80908-3514
(719) 495-0015

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan feedback

Dear John Hickenlooper and Water Board Members,

The Colorado Water Plan is a critical piece of legislation that will help preserve pure water resources for the next generations. There are some key points in the plan that require improvement, however.
1) This plan should include substantial funding for stream management and restoration.
2) Specific screening criteria for new water projects in Colorado must be defined so that projects can only be approved if it is shown that they benefit our communities, rivers and agriculture.
3) More stringent regulations for activities like fracking, that threaten the purity/safety of our drinking water.
4) Conservation goals for agriculture as well as urban conservation goals.

Sincerely,
Ms. Lisa Dorr

Ms. Noelle Vignola
11913 W Long Cir Unit 202
Littleton, CO 80127-4652
(720) 922-7722

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Water Stewardship

Dear John Hickenlooper and Water Board Members,

Water, as everyone knows is fast becoming a major issue. We need to not find ourselves in California's situation. Other countries are doing extraordinary things in Water conservation, desalination and management. This state has extraordinary resources that need to be managed not just well, but brilliantly. We need to put our funds where they are needed to insure exceptional water management over the next hundred years. Not just decade, but century. And not just managed but nurtured in a way that leads the nation.

Protect our water. Nurture our water supplies. Be willing to think long term for everyone. Be generous in your funding. Let our state demonstrate to everyone what true wise stewardship of land and water really means.

Sincerely,
Ms. Noelle Vignola

Mr. Patrick Harrington
2727 Florence St
Denver, CO 80238-2984
(303) 669-8662

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan is for all of us!

Dear John Hickenlooper and Water Board Members,

Please consider the people of Colorado as the principle users and beneficiaries to the Colorado Water Plan. Although corporate interest is a valuable and needed consideration choose on the sided of Colorado citizens and environment as the longer term investment that can be made now. Be as specific as you can regarding the implementation, accountability and enforcement of our conservation goals. Funding of restoration projects and management of our natural streams, rivers and bodies of water is essential to their protection, please prioritize monies to ensure these programs do the jobs they are intended to do. Finally please create specific criteria for any new water use projects that prioritize the overall community, rivers and agriculture as their focus.
Thank you for all you do and for hearing from one of your NATIVE COLORADO FAMILIES.
Patrick Harrington

Sincerely,
Mr. Patrick Harrington

Mrs. Lyn Du Mont
13990 Crabapple Rd
Golden, CO 80401-1535

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Comments on the Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Protect our rivers (the life blood for all,) against polluters, including the epa. Pesticide residue from agriculture is already taking a toll and will increase toxicity in the environment.

One issue for us is the law against collecting rain water. It flows into the ground off our roofs. If we collect it, we still put it back into the ground so, what's the difference?

We would love to see Colorado lead the nation in sustainability and clean environmental practices. What a legacy that would be for those in power.

Sincerely,
Mrs. Lyn Du Mont

Ms. Mari Heart
3235 Noble act.
Boulder, CO 80301

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan urban conservation suggestions

Dear John Hickenlooper and Water Board Members,

I'd like to offer a specific suggestion around urban conservation plans.

It would be very wise to implement catch systems in the parkways between the sidewalk and curbs as they have done in Portland. It would also be wise to implement permaculture designs for all parkways and circles throughout the state to conserve on water. This would mean sunken rather than raised parkways. Raised parkways promote water run off which is not at all supportive of water conservation. Additionally, we should use drought tolerant and native plants exclusively in these areas.

Please let me know if I or my permaculture design teams can be of assistance in supporting such efforts.

Sincerely,
Ms. Mari Heart

Mr. LaVonne Whelchel
2161 S Estes St
Lakewood, CO 80227-2322
(303) 988-2786

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan input

Dear John Hickenlooper and Water Board Members,

Please do more to protect water for the future of Colorado.
Specifically, please BAN tracking. This would have numerous ecological benefits to Coloradans; including saving millions of gallons of water from being polluted. Thank you.

Sincerely,
Mr. LaVonne Whelchel

Ms. Carole Morain
32 Bacus Ave
Durango, CO 81301-4144

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan considerations

Dear John Hickenlooper and Water Board Members,

Water is very important to the state and always has been. One of the criteria that has never been addressed is growth. Other states are going to be effected by drought and flooding due to the changes in climate. Population growth in Colorado should be based on the state's ability to supply resources rather than to attract dollars.

Please consider this seriously.

Thank you,

Carole Morain

Sincerely,
Ms. Carole Morain

Mrs. Jacqueline Feldman
7957 E 149th Pl
Thornton, CO 80602-7987

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Total Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Dear Governor,

My husband and I moved to this beautiful wonderful state last year. Never in all of our 78-80 years happily living in New Jersey did it ever enter our thoughts that one day we would move from our state much less out west to Colorado. Our daughter moved here on her own with her handicapped son 2years ago and now we have followed them.

She and her son are happy here because of the healthy life style and there is good and proper care for him. We are happy to be near them but also for the welcoming and friendliness of the folks in Colorado. At our late age in life we are excited to have started to hike. The wondrous mountains, the creeks and rivers are a gift of nature.

I understand that our water systems are in jeopardy. I urge you sir, to do all you can to insure that the next generations can enjoy the life that we are fortunate to experience here.

Sincerely,
Mrs. Jacqueline Feldman

Mrs. Cami Lind
3339 N Columbine St
Denver, CO 80205-4146
(303) 393-7728

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Considerations for CO Water Plan

Dear John Hickenlooper and Water Board Members,

Please protect our rivers/streams & lakes.
Please continue the work so that the next draft of the plan includes:
(1) Substantial funding for stream management and restoration is needed. Only $1 million has been allocated for stream management plans. That amount is simply inadequate to productively manage tens of thousands of miles of Colorado's rivers.
(2) The plan sets a common-sense urban conservation goal of approximately 1% per year water use reduction. To achieve this important goal, infrastructure improvements, technological innovations and behavioral changes in Colorado will need to occur. Help the state identify specific measures to encourage more efficient urban use of our limited water resource.
And (3), specific screening criteria for new water projects the state invests in are needed so that projects move forward only if they benefit our communities, rivers and agriculture.

Sincerely,
Mrs. Cami Lind

Mr. Richard Grimes
1030 Ursula St
Aurora, CO 80011-6429
(303) 364-4217

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Do not change Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

I strongly approve adding fluoride to my drinking water.

Sincerely,
Mr. Richard Grimes

Mr. Edward Morrison
7825 Barbara Ann Dr Apt B
Arvada, CO 80004-5728
(720) 480-6197

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: One comment for the 2nd draft of the Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

I like the perspective of the new Colorado Water plan. I have one comment:

I agree with the Sierra Club's analysis that our water plan must consider specific ways that urban conservation goals can be met. Urban conservation will be critical to water use in the state moving forward. Living in the city myself, I see most urban uses of water as mindlessly wasteful and very correctable.

Stream restoration is a high priority for me: the biodiversity of our planet is a critical concern and cannot be shrugged off. Not only from an ethical stand point (human beings are not the only lives which matter), but from a pragmatic standpoint: Our economic systems cannot exist without the grander natural systems which support us. As biodiversity reduces, the resilience of the biosphere reduces. Our species does not have that great of a chance to survive a mass-extinction should the system collapse. We're too big for that.

All new water project must have a local benefit. All new projects must have an ecological benefit if there is any human benefit to be had to be a long-term solution for our needs. New projects cannot be simply profitable.

Conservation is our first defense. From urban to rural communities, the efficient use of water must be stressed in the face of our growing population. The water resource is likely to shrink as that population expands. Therefore, there is no alternative but to conserve. Better to start now.

Sincerely,
Mr. Edward Morrison

Mr. Chris Applegate
4825 W 10th Ave Apt B
Denver, CO 80204-2809
(337) 981-7193

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan.

Dear John Hickenlooper and Water Board Members,

We need to enhance the purpose of the Colorado Water Plan. We need to make sure municipalities are working to reduce water use. We can't turn into California and we need to be mindful now by implementing much needed conservation work as one piece where the Colorado Water Plan can be enhanced.
Second, our streams and rivers are a major economic driver for Colorado. From river rafting, fly fishing, and hiking. People come from all over to enjoy the beauty of Colorado. Our streams and rivers play a big role in that and we must put resources into protecting them. We need to enhance funding for the management of our streams and rivers from being misused and restored as needed.
Agriculture, while an economic driver for many Colorado communities will also need to play a part in conserving our water resources. Support, grants, and initiatives targeted at cost saving agriculture techniques will be vital to any water conservation plan the state implements.
Lastly, we need to think of conservation as our first source of water. Not large diversion projects and new reservoir. We need to protect the beauty of Colorado which means we will need to be meeting conservation targets for years to come.
I think we can accomplish this and keep our state as beautiful today as it will be in the future. We have a lot of work to do to accomplish it, but a real water plan will enhance these initiatives to protect Colorado's way of life while balancing the wildlife and natural beauty that has made Colorado so colorful.

Sincerely,
Mr. Chris Applegate

Ms. Sierra Farris
922 Ingleside Rd
Laporte, CO 80535-9751
(425) 802-7480

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado's future generations

Dear John Hickenlooper and Water Board Members,

The growing impact of climate change on our water resources requires a forward thinking Governor to protect future generations while avoiding pressure from present day industries that strive to grow profit over sustainable future water supplies. Please consider the future needs of our children over the present day corporate profiteering.

Sincerely,
Ms. Sierra Farris

Miss Summer Colt
3434 E 17th Ave Apt 4
Denver, CO 80206-1865
(970) 728-3668

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan - a citizens approach

Dear John Hickenlooper and Water Board Members,

I highly agree that more monies need to be allocated for stream & river restoration efforts, as well as finding efficient creative ways to cut down on water consumption in the State of CO, I STRONGLY feel the water in our state deserves to be allocated to Colorado residents FIRST & hope allocations & restrictions on water flowing out of state is at reasonable levels.

Sincerely,
Miss Summer Colt

Ms. Tracy Leigh
PO Box 561
Winter Park, CO 80482-0561
(720) 470-7281

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan - Please Read

Dear John Hickenlooper and Water Board Members,

From our agriculture to our outdoor industries to our communities and wildlife, water plays an important role in our state's way of life. With the growing gap between water supply and demand, Colorado needs a strong plan to ensure that the next generations have a secure water future.

Sincerely,
Ms. Tracy Leigh

Ms. Karen Anderson
PO Box 328
Rollinsville, CO 80474-0328
(303) 258-7258

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan Suggestions

Dear John Hickenlooper and Water Board Members,

Honorable Governor Hickenlooper and Water Board Member,
Thank you for your work on the Colorado Water Plan. It is increasingly acknowledged throughout the world that the next major resource that will either empower or entangle our planet will be the resource of water. Therefore your work with this is essential.
Conservation goals are therefore extremely important with the gap between needed water and used water.
I would personally urge you to make sure that there is substantial funding for this work, particularly for stream management and restoration. Coloradans prize the out-of-doors, and indeed people often move to this state because of the outstanding environment. Please see that adequate financing goes into this project.
Thank you for your attention,
Karen Anderson

Sincerely,
Ms. Karen Anderson

Mr. Matthew Kling
645 S Grant St
Denver, CO 80209-4117
(303) 483-5173

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Comments on the Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Hi, I'd like to comment on the Water Plan.

(1) The plan's urban conservation goals lack implementation specifics.

(2) Substantial funding for stream management and restoration is needed.

(3) Specific screening criteria for new water projects are needed so that projects move forward only if they benefit our communities, rivers, and agriculture.

In addition, the experience in California shows that we should plan for a drought long before one occurs. I recommend you take a close look at the policies they put in place in Australia.

Sincerely,
Mr. Matthew Kling

Ms. Kerri Stroupe
4574 Irving St
Denver, CO 80211-1352
(303) 480-3583

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Comments re water plan

Dear John Hickenlooper and Water Board Members,

We are avid outdoors people - rafting, camping and backpacking in Colorado. We want to make sure that our natural resources are protected. Please revise the plan to provide more specifics regarding urban conservation goals - at least 10% conservation goal by 2020. For example mandating more water conservation oriented landscaping.

We need more steam management and restoration. I think that there needs to be more resources allocated to protecting our rivers. Including modernizing agricultural water use and water sharing agreements. These should promote more efficient irrigation and less run off of chemicals and fertilizers.

Large scale water diversions are no longer appropriate answers as they are far too disruptive to the natural ecosystems.

Sincerely,
Ms. Kerri Stroupe

Mr. Ann And Timothy Wheeler
189 Verde Ln
Durango, CO 81301-8395
(970) 247-7879

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

I hope that in the new water plan the State of Colorado will provide incentives for our agricultural industries to make water use efficiency more important than the use it or lose it prescription implied in our current water laws. Instead of providing the perverse incentive now in place for agriculture to waste water, we should instead look to alter the laws to provide more water rights to agricultural users that make the most efficient use of their water. i.e. most efficient users get the most water.

Thank you.

Sincerely,
Mr. Ann And Timothy Wheeler

Ms. Eugenia Cooper
2826 Freedom Hts
Colorado Springs, CO 80904-5132

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan Water Conservation

Dear John Hickenlooper and Water Board Members,

Thank you for your purposeful objective to resolve and protect our water rights.

Sincerely,
Ms. Eugenia Cooper

Mr. Gregory Miller
PO Box 547
Nederland, CO 80466-0547

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan Citizen Recommendations

Dear John Hickenlooper and Water Board Members,

Be creative. Expand the programs to protect our vast watersheds. Enshrine in legislation the priority of a healthy watershed and prestige river systems.

Make it unthinkable to frack the Rockies. You've already allowed fracking to hollow out the plains and fill those lowland watersheds with chemical, anti fungal, anti bacterial slurry in order to extract trash gas. Let that be the compromise. Make the lands managed by the state so restricted and protected from large scale industrial operations that the federal agencies won't even try to undertake anything within hundreds of miles.

The program to raise water bills and have money matched by the forest service to restore watersheds is a great way to build even stronger healthy relationships with the federal agencies. They need money, so help them get it. 9/10 voters, maybe even 99/100, won't notice and they will end up securing cleaner water for .80 cents a bill cycle.

Finally, impede any attempts, current or future, to allow private corporations or other states from outright owning or long term leasing and developing reservoirs and large water catchments.

If Colorado or Colorado companies choose to make a detailed analysis and potentially sell water out of state that's fine. But not without extensive oversight and public comment.

Besides, keeping our watershed on the eastern slope healthy be hooves all of our immediate neighbors in the heartland.

You are smart and resourceful individuals. Listen to your hearts and make our water sacred. It's our God-given responsibility to steward this land, these animals, and the water that animates all of it.

Sincerely,
Mr. Gregory Miller

Mr. Tobias Bank
498 Catalpa Ct
Louisville, CO 80027-2717
(303) 666-9089

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: CO Water Plan

Dear John Hickenlooper and Water Board Members,

-The plan's urban conservation goals lack implementation specifics.

-Substantial funding for stream management and restoration is needed.

-Specific screening criteria for new water projects are needed so that projects move forward only if they benefit our communities, rivers and agriculture.

Sincerely,
Mr. Tobias Bank

Ms. Kathy-Lyn Allen
3662 Wonder Dr
Castle Rock, CO 80109-4545

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan - DO THE RIGHT THING

Dear John Hickenlooper and Water Board Members,

Please do your due diligence - for me, my children, their children and all of Colorado - and ensure this plan is coordinated the right way.

Please:
(1) The plan's urban conservation goals lack implementation specifics.

(2) Substantial funding for stream management and restoration is needed.

And (3), specific screening criteria for new water projects are needed so that projects move forward only if they benefit our communities, rivers and agriculture.

Sincerely,
Ms. Kathy-Lyn Allen

Ms. Lila Greaves
1720 E Jamison Pl
Centennial, CO 80122-3024

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado's Water Plan

Dear John Hickenlooper and Water Board Members,

The second draft of the Colorado Water Plan, released in July, is flowing in the right direction. From setting a conservation goal to reducing water use in our cities and towns, to acknowledging that certain protections are needed to keep our rivers healthy, the second draft shows promise. However, much remains to be done:

(1) The plan's urban conservation goals lack implementation specifics.

(2) Substantial funding for stream management and restoration is needed.

And (3), specific screening criteria for new water projects are needed so that projects move forward only if they benefit our communities, rivers and agriculture.

Sincerely,
Ms. Lila Greaves

Mr. Gerald Kauffman
10483 County Road 8
Fort Lupton, CO 80621-8425
(303) 637-0769

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Conservation Board: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Protections are needed to keep our rivers healthy. 1) The plan's urban conservation goals lack implementation specifics. 2) Substantial funding for stream management and restoration is needed. 3), specific screening criteria for new water projects are needed so that projects move forward only if they benefit our communities, rivers and agriculture.

Please address these things in the final draft.

Sincerely,
Mr. Gerald Kauffman

Ms. Charlene Heaston
2934 Willow St
Denver, CO 80238-2672

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Water Conservation and Protection

Dear John Hickenlooper and Water Board Members,

Please continue to acknowledge our water conservation concerns for Colorado. Thank you for your dedication to caring for our state's natural resources. We have so much to protect and it is all up to us to prevent irreversible damage and loss. I personally want to minimize my own footprint so that future generations can not only enjoy the beauty that surrounds us but also learn to respect and protect it as well.

Sincerely,
Ms. Charlene Heaston

Mrs. Ruth Zimmerman
2501 E 104th Ave Unit G4-1
Thornton, CO 80233-4412
(303) 460-7261

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Plan for Use of Colorado Water

Dear John Hickenlooper and Water Board Members,

1.The $1 million allocated for Stream Management is inadequate to productively manage the tens of thousands of miles of Colorado's Rivers.

2.To achieve Conservation Goal of 1% per year Water Use Reduction, we need specific measures to encourage more efficient use of our limited water system.

3. Specific Screening Criteria is needed for new Water Projects that the state invests in, so that projects are supported only if our Communities, Rivers, and Agriculture actually benefit...!

Sincerely,
Mrs. Ruth Zimmerman

Mrs. Mary Ratigan
2591 S Harlan Ct
Lakewood, CO 80227-4087
(303) 980-9775

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan improvements

Dear John Hickenlooper and Water Board Members,

I support the current Water Plan for Colorado but would like to see more specifics on how stream maintenance and improvement would be funded and an adequate dollar amount allocated. Also what are the specifics in the plan to increase water conservation in urban areas.

Sincerely,
Mrs. Mary Ratigan

Dr. David Loy
7736 Nikau Dr
Niwot, CO 80503-8671
(513) 203-4703

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan comment

Dear John Hickenlooper and Water Board Members,

This is an important issue!

Sincerely,
Dr. David Loy

Ms. Ellen Woodbury
826 S Buckeye Dr
Loveland, CO 80537-8010

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan comment

Dear John Hickenlooper and Water Board Members,

No water for fracking!!!

Sincerely,
Ms. Ellen Woodbury

Ms. Sharon Baker
PO Box 181
Palmer Lake, CO 80133-0181
(719) 487-9053

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Waters

Dear John Hickenlooper and Water Board Members,

Water is our liquid gold. We must protect it from chemicals, misuse and wasting it. If we do not care for our water the next generations will curse us for our lack of caring and salvaging our water from those who are only interested in making money and not caring about the environment.

Sincerely,
Ms. Sharon Baker

Ms. Amy L Munger
3812 Northbrook Dr
Boulder, CO 80304-1434
(720) 882-2335

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: please consider rain water harvesting and gray water use in the Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

To Whom It May Concern:

Thank you for your work on Colorado's water policy!

For me, I would love to see more done to not only legalize, but incentivize rain water harvesting and gray water use. This would allow us to avoid expensive trans-mountain water diversions that unfairly place the needs of people living on the Front Range above the needs of people living on the Western Slope.

Please consider how we can help to inform the public about safe and sustainable ways to make the best use of our limited water supply while minimizing our energy use through gray water systems and rain water collection.

I appreciate your time and consideration!

Sincerely,
Ms. Amy L Munger

Mr. Michael Johnson
9195 Sagebrush Trl
Lone Tree, CO 80124-3059

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Water Plan

Dear John Hickenlooper and Water Board Members,

Please include:

1. Implementation specifics.

2. Funding for stream management and restoration.

3 Specific screening criteria for new water projects so that projects move forward only if they benefit our communities, rivers and agriculture.

Sincerely,
Mr. Michael Johnson

Mr. Eric Werner
3869 Cardiff Ct
Loveland, CO 80538-2079

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Water Plan

Dear John Hickenlooper and Water Board Members,

I agree with the Sierra Club's analysis of the draft plan and with its recommendations re what needs to be done:

(1) The plan's urban conservation goals lack implementation specifics.

(2) Substantial funding for stream management and restoration is needed.

(3) Specific screening criteria for new water projects are needed so that projects move forward only if they benefit our communities, rivers and agriculture.

Thank you for considering this input.

EW

Sincerely,
Mr. Eric Werner

Ms. Linda Serio
13635 E Bates Ave
Aurora, CO 80014-3660
(303) 368-8123

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water

Dear John Hickenlooper and Water Board Members,

I am a CO native. I love CO. We have been blessed with the Rocky Mountains. These mountains give us snowfall which gives us water. This water needs to be protected and used carefully so my (our) future generations will thrive.

Please be careful!

Sincerely,
Ms. Linda Serio

Mr. Mark Paullin
2510 Magnolia St
Denver, CO 80207-3505
(303) 780-7769

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water

Dear John Hickenlooper and Water Board Members,

We in Colo. need to protect our water (A) from Fracking and (B) minewastes and (C) from down river water users. Fresh, clean water originates here... lets keep it here. Colo. needs more reservoirs both on the East side andWest side of the Mtns.

Sincerely,
Mr. Mark Paullin

Dr. Lois Vanderkooi
710 Burbank St
Broomfield, CO 80020-1658
(303) 439-0407

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Water

Dear John Hickenlooper and Water Board Members,

I appreciate your efforts in creating a plan to conserve and manage water in our state, and it seems that you are moving in a helpful direction. Given the severe droughts in states bordering the Pacific Ocean, the current and past fires, and our history with drought and expanding populations, I urge you become more specific in establishing urban and rural conservation goals and gaining funding for stream management and restoration. It would also behoove you to establish specific screening criteria for new water projects that benefit rivers, communities, and the agricultural sector.

Sincerely,
Dr. Lois Vanderkooi

Mr. Jim Malone
2205 Island Pt
Evergreen, CO 80439-8968
(303) 674-5955

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: most toilets use more water than advertised! check it out!

Dear John Hickenlooper and Water Board Members,

My greater interest in retirement is to show and assist friends, family and anyone interested in listening, how to conserve energy and water resources. In a lot of instances, I help in the purchase of some of these resources. I have discovered that the advertised quantities for toilets are bogus, a lot of times.

A lot of toilets advertise 1.6 gallons and really use 2-3 gallons. I have had 3-5 types of toilets in the last 20 years and have found 1 that really is as efficient as advertised and sometimes better. The Glacier Bay n2316 TL Dual Flush works better than any other toilets I have experimented with and can often use a #1 flush at 1.1 gallons per flush even for a #2 use.

I 'm sure that you are really not interested in any more "toilet talk", so just look into how many toilets advertised at 1.6 gallons really are using a lot more water.

jimskyguy

Sincerely,
Mr. Jim Malone

Mrs. Allison Phipps
3363 W 26th Ave
Denver, CO 80211-4087
(303) 480-5359

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan must be strong!

Dear John Hickenlooper and Water Board Members,

We need to protect our most valuable assetColorado water! We need to do this by conservation, recycling, and reduction of use. With the rising population and drought stricken states to our West it is more important then ever that we have a strong plan that keeps our state's water security strong.

Sincerely,
Mrs. Allison Phipps

Miss Lisa Hanckel
2890 Dartmouth Ave
Boulder, CO 80305-5220
(720) 310-0032

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan Needs Thoughtful Changes

Dear John Hickenlooper and Water Board Members,

More funding is needed to properly manage the tens of thousands of miles of rivers. We also need to implement educational and infrastructure improvements to conserve more water. The state needs to implement a thoughtful screening process for new water projects, only approving those that benefit local communities, rivers and farming.

Sincerely,
Miss Lisa Hanckel

Mr. Peter Leuenberger
1245 Race St Apt 309
Denver, CO 80206-2875
(303) 906-7255

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan - Message from Pete.

Dear John Hickenlooper and Water Board Members,

Please, take care of our environment, of nature and of water. Jobs, luxuries, and all else does not matter if our health and our environment is not safe.

Thanks,
Pete.

Sincerely,
Mr. Peter Leuenberger

Ms. Phoebe Brookfield
2501 E 104th Ave
Thornton, CO 80233-4401

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Our Precious Water

Dear John Hickenlooper and Water Board Members,

Dear Decision Makers,

Water is the most crucial issue of our future.

To protect our precious water these things are needed:

1. Allocate enough funds to properly maintain the health of our natural streamflows.

2. No diversions.

3. Modernize agricultural & water sharing practices and make it easy to participate.

4. Stop allowing development over wetlands & other natural water areas.

Thank you for your attention to this urgent issue!

Sincerely,
Ms. Phoebe Brookfield

Mr. Robert Liedike
5379 Balsam St
Arvada, CO 80002-3548
(303) 420-0250

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan do it now.

Dear John Hickenlooper and Water Board Members,

Do it now.

Sincerely,
Mr. Robert Liedike

Ms. Peg Mcmillen
11705 W Applewood Knolls Dr
Lakewood, CO 80215-7021

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Water conservation for our future

Dear John Hickenlooper and Water Board Members,

When I moved to Colorado from New Jersey as a child, in 1971, I remember hearing how water was a precious commodity in Denver, the reason the houses were built so close together. I was told that Denver would never be able to sustain a large urban community and it was each of our individual responsibilities to conserve. Back then the outlying agricultural lands were lush with productive crops and the rural areas of Colorado were thriving. Since that time, farmers have sold their water rights to Denver, farmlands have dried up, rural communities have shuttered up as Denver siphons their livelihood. Not to mention the rapidity with which we consume waters provided by the high country. It is astounding to me that we are growing at a rapid fire pace without a substantial strategic plan that both controls that growth and anticipates the great water consumption that comes along with it. We have long struggled to sustain our water consumption needs.
As stewards of this resource, I would urge you to continue your good work by ensuring that you have sound measurable objectives that anticipate the worst case scenario, defines the limits of our city and articulates clear goals and strategies; modes and dates of implementation. And that you would scrutinize the many projects, building and otherwise, infiltrating our city and beyond for the impact they will have on our community and ensure we can supply and support, giving care and needed funding to maintain our natural resources, streams and tributaries.

Sincerely,

Peg McMillen

Sincerely,
Ms. Peg Mcmillen

Mr. Joshua Munger
3812 Northbrook Dr
Boulder, CO 80304-1434

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: water policy input

Dear John Hickenlooper and Water Board Members,

I appreciate the opportunity to comment on Colorado water policy.

Conservation must be the cornerstone. A large percentage of residential water use comes from flushing toilets and watering lawns. I am an advocate of well-managed composting toilets that do not stink and recycle the nutrients our bodies produce while saving tens of gallons of water per person per day. I know this is an uncomfortable concept for many due to a lack of personal experience. However, this method of nutrient recycling is the most ecological and provides resiliency during a disaster. Additionally, utilizing gray water from the home to irrigate the garden is a great way to reduce the demand for residential irrigation. I know there is some potential for improper management of these types of systems, but we must empower the people to do what is right.

We could go even further to address the concept of lawns in such an arid state, providing incentives to replace lawns with native vegetation or edible plants. We could address how our meat-heavy diets require much more water than a calorie-equivalent vegetarian diet. (Note I am not a vegetarian.) We could implement permaculture design to slow, spread, and soak water into the soil, mitigating both flood and drought.

I know some of these ideas may seem idealistic, but I wanted to share the concepts. I hope that you will seriously consider what is best for all citizens of Colorado and empower them by opening a legal path to graywater and encouraging composting toilets.

Sincerely,
Mr. Joshua Munger

Ms. Lily Kempf
10 Studio Pl
Colorado Springs, CO 80904-4417
(719) 629-7309

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan Focus

Dear John Hickenlooper and Water Board Members,

We can't afford to be franking, that is for sure. Natural and eco friendly industry is the only way to go. Let's implement these changes...yesterday is today!

Sincerely,
Ms. Lily Kempf

Mr. Stephen Parks
1300 Tapadero Rd
Bailey, CO 80421-1038
(303) 838-4460

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan...

Dear John Hickenlooper and Water Board Members,

Keep OUR water Clean and available for GERERATIONS to come...

Sincerely,
Mr. Stephen Parks

Mrs. Brenda Sanders
610 S Clinton St
Denver, CO 80247-1574

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan for Conservation Essentials

Dear John Hickenlooper and Water Board Members,

The "Conservation Essentials" plan needs more specifics in order for this to work correctly for the people of Colorado. Please address this in specifics so it is clearer with meaningful goals and real actionable steps. The front range demands are controversial, costly, and harm our rivers. Conservation and efficiency are less expensive, less contentious and are more effective. Expand conservation incentives, increase indoor and outdoor efficiency, and develop and support water recycling programs. Modernize agricultural water use and water-sharing agreements. commit that large new diversions is NOT the answer.

Respectfully,
Brenda Sanders
610 S. Clinton
Denver, CO 80247

Sincerely,
Mrs. Brenda Sanders

Ms. Gail Richards
6292 Montezuma Rd N
Fort Garland, CO 81133-9510
(719) 379-3030

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan/Taking action

Dear John Hickenlooper and Water Board Members,

Please stop sending water from Colorado rivers to other states and initiate program to teach Coloradans to conserve the water resources we have in our state. Thank you.

Sincerely,
Ms. Gail Richards

Ms. Francoise Poinsatte
2636 5th St
Boulder, CO 80304-3204
(720) 210-8802

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Promote conservation with the Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

The Colorado Water Plan is a step in the right direction, but needs more work to ensure a healthy water future for our state, especially in light of possible droughts brought on by climate change. First off, conservation measures need to be defined to the fullest extent possible at all stages of implementation. Secondly, funding needs to be identified for stream management and riparian restoration. Finally all new water projects need to be evaluated for conservation and to ensure they don't put further strains on our rivers, streams, and riparian habitats. Specific criteria should be establish to ensure environmental protection and water conservation from the onset.

Thank you for considering my comments in the finalized version of the Colorado Water Plan.

Sincerely,
Francoise Poinsatte

Sincerely,
Ms. Francoise Poinsatte

Mr. Jeff Basinger
860 White Ave
Grand Junction, CO 81501-3443

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Comments on the Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Dear Governor Hickenlooper and Water Board Members: I was born and raised in western Colorado and remember a Colorado without Vail, Copper Mountain, Telluride ski area resorts. I remember the two-lane highway from Denver to Grand Junction before the Dillon reservoir and the west slope diversions to the front range. I remember when the tallest building in Denver was 13 stories

I am mortified by the growth all across the entire state, and the unabashed lawns that are expected in every suburb and golf course. The consumption of water by people in Colorado today has no consideration for future generations, much less the egregious Colorado River pact with down-river consumption by other states. The Colorado River is named as the most endangered river in North America.

The EPA spill of 3 million gallons of deadly toxic mining metals into the Las Animas river in southwest Colorado recently shows the ignorance of capitalistic corporations and government that does not care for the quality of life for our citizens. With over 10,000 abandoned mines in Colorado, we cannot continue as we have previously. Times call for drastic actions to protect our water, our rivers and streams.

There must be mandatory and drastic conservation efforts to reduce consumption for landscaping. There must be substantial funding for clean-up efforts and restoration projects. There must also be serious investigation of the affects of fracking our precious land for oil and natural gas, and oil and gas companies held accountable and responsible for the damage to our environment and communities.

The Colorado Water Plan must be a radical departure from previous and current policies and practices. It must have a conscientious intention of sustainability for the next century that will receive opposition, however every person in Colorado must take responsibility for supporting our most precious resource that we cannot live without.

Thank you. Sincerely, Jeff Basinger

Sincerely,
Mr. Jeff Basinger

Mrs. Kathleen Carbone
PO Box 98
3382 Overland Rd.
Jamestown, CO 80455-0098
(303) 447-9003

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Thoughts on the Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Hi there,
The Sierra Club has made me aware that you are working on a water plan to secure Colorado's future. After reading their recommendations I see one point I really like. Recycling water. I take this as the ability to capture rainwater and use "grey water". Please include these in your water plan.
And thanks for your time and efforts in planning for Colorado's future.
Sincerely,
Kate Carbone

Sincerely,
Mrs. Kathleen Carbone

Ms. Catherine Collentine
1536 Wynkoop St
Denver, CO 80202-1185
(303) 454-3363

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado State Water Plan

Dear John Hickenlooper and Water Board Members,

Governor Hickenlooper and Water Conservation Board Members:

You and I both know how important clean water and healthy rivers and streams are to Coloradans in every part of this great state. It is imperative that the Colorado Water Plan has a strong focus on reducing use of water, keeping harmful industrial practices, like fracking, from overusing or polluting our precious water resources and prioritizing conservation focused practices above all else.

The Colorado Water Plan must include:
1) Substantial funding for stream management and restoration is needed. Only $1 million has been allocated for stream management plans. That amount is simply inadequate to productively manage tens of thousands of miles of Colorado's rivers.

(2) The plan sets a common-sense urban conservation goal of approximately 1% per year water use reduction. To achieve this important goal, infrastructure improvements, technological innovations and behavioral changes in Colorado will need to occur. Help the state identify specific measures to encourage more efficient urban use of our limited water resource.

And (3), specific screening criteria for new water projects the state invests in are needed so that projects move forward only if they benefit our communities, rivers and agriculture.

I appreciate your attention to the conservation and protection of our valuable water resources.

Sincerely,
Ms. Catherine Collentine

Ms. Wendy Pace
1515 W US Highway 34
Loveland, CO 80537-9787
(970) 491-4118

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Moving forward w/ Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

As we all know, water is our most precious resource. It is what future wars will be fought over. I hope it never has to come to that, but at the current rate we are going and with climate change raising it's ugly head we have to be smart in how we proceed with this very valuable resource. Especially in a state w. a water history and usage like Colorado.

Let's keep Colorado's rivers wild, healthy and flowing. Our rivers are part of our heritage and way of life. We need to provide consistent and significant funding to assess, protect, and restore the health of our rivers, including thorough streamflow management plans all across the state. Strong, flowing rivers are vital for life of not just humans, but also fish and wildlife. It allows us to recreate in order to thrive and be healthy communities.

We should avoid large trans-mountain diversions. We need to change the status quo. Looking across the state to insure our water needs is no longer the answer. We need to learn to bring things to a more local scale. Trans-mountain diversions that drain water from the West Slope rivers for the use of the growing population of the Front Range is very controversial, costly, and overall harmful to our rivers and their environments. Conservation and efficiency are a key component in making this work, as it is more effective and less expensive, and less contentious.

We very much need to increase our focus on Water Efficiency and Recycling in our cities, towns, and high tourism/resort areas. With Colorado been seen throughout the Nation as one of the top states to live in - our population increase is projected to double to 10 million residents by 2050. These growing communities will need to have proper management tools set into place in order to provide the water need for the growing population. This can be achieved by implementing the proper and improved efficiency and conservation models that will protect our rivers and the way of life that we as Coloradans have come to know and love. We highly need to incorporate a state wide conservation goal of 10% by 2020. This can be done by expanding conservation incentives, increasing both indoor and outdoor efficiency, and development and support for water-recycling programs.

Let's provide incentives and funding to modernize irrigation infrastructure and support voluntary, flexible, compensated water-sharing agreements. In addition, there is a need for streamlining

water project permitting without compromising the protection and health of our streams, rivers, and the communities that rely on them. This means that any and all projects need to meet the standards and are consistent with the essentials needs stated above, allowing them to qualify for state support.

As Coloradans we all have a VERY IMPORTANT ROLE to play when it comes to water conservation and our resources and using them more efficiently. Regardless if we are urban residents, farmers, or business owners. It is very important to educate and teach people the importance of water and how to live with in our means. Greater cooperation, innovative technologies, and best practices need to be set into place and communicated w. Colorado residents. Doing so will allow Colorado communities to be prosperous while supporting thriving and sustainable agricultural and tourism industries, and in the process keep our rivers healthy and flowing. After all we are ALL in this together.

To achieve all of this the draft Colorado Water Plan needs more work to include the following...

*Allocate resources to access and protect our rivers
*Set a statewide municipal water conservation goal of 10% by 2020
*Modernize agricultural water use and water-sharing agreements
*Commit that large new diversions are NOT the answer

Thank you so much for your time.

Sincerely,
Ms. Wendy Pace

Ms. Karen Dike
708 Hayden Ct
Longmont, CO 80503-7002
(720) 363-7119

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan message

Dear John Hickenlooper and Water Board Members,

The first thing we need to do is prevent contaminating what we have. Use of millions of gallons of water for fracking, contaminating it so badly it is forever removed from the water cycle is insane. Also, allowing the fracking/ injection process to contaminate our aquifers is just plain crazy.

Sincerely,
Ms. Karen Dike

Mr. Andrew Schmidt
1522 Vrain St
Denver, CO 80204-1131

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado's Water Plan

Dear John Hickenlooper and Water Board Members,

I think there are several things that have been done well by the Colorado Water Conservation Board in developing this Water Plan, but also a few things need to be further addressed. It is wonderful that so much planning has already been initiated and I believe that most of the work that needs to be done to protect the environment and business, now and in future years, has been accounted for. The areas where the plan falls short are more specific conservation goals for urban areas. Currently the plan has a high amount of variability as far as policies and planning are concerned with urban area conservation, which could lead to populated areas of Colorado falling short in access to quantity and therefore most likely quality water needed to sustain a healthy environment and a healthy business environment as well. We need more specific conservation goals to ensure that Colorado grows and remains healthy in good times and bad.

Another area where the CWCB's Water Plan needs a little bit of tweaking is in addressing the need for substantial funding for stream management and restoration. Currently, like the urban conservation goals, the Water Plan isn't outlined concretely enough, which could lead to crises and deteriorated environmental conditions or slowed economic growth. Colorado must make the investment now and outlining a proactive and specific plan now will help secure a safe water future.

Lastly, the current Water Plan falls short on its screening procedure. We must hold business, agriculture and any other project to a high standard to ensure that our future water needs are met. While we want to encourage businesses and projects of different value sets, we need to ensure that they are right for Colorado. Colorado needs to have a secure and healthy environment and business opportunity in the future and some businesses may need to look elsewhere, or adjust to Colorado's high standards today to make sure that we can ensure that successful future.

Overall, the amount of planning and consideration completed by the Colorado Water Conservation Board is impressive. The few items mentioned above will only help bolster a strong and vibrant water future for Colorado. With this added input, I hope Colorado can have the healthy environment and business culture that its citizens deserve.

Thank you for your time.

Sincerely,
Mr. Andrew Schmidt

Mr. Lennard Zinn
7437 S Boulder Rd
Boulder, CO 80303-4641
(303) 499-6229

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Please see to it that the Colorado Water Plan is the strongest it can be.

Dear John Hickenlooper and Water Board Members,

Please see to it that the Colorado Water Plan is the strongest it can be to protect our precious Colorado waters.

Please see to it that specific methods for implementing urban water conservation and achieving specific use reduction goals are in the plan.

Please see to it that funding for stream management and restoration is substantially increased from current levels, as it is woefully insufficient now.

Finally, please ensure that screening criteria for future water projects are incorporated into the plan that allow projects to move forward only if they benefit our communities, rivers and agriculture.

Thanks for your attention to this vitally important issue.

Sincerely,
Mr. Lennard Zinn

Ms. Nancy Oaks
85555 Fairmount Drive
Denver, CO 80247
(303) 322-4911

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: colorado water Plan

Dear John Hickenlooper and Water Board Members,

Thank you for your attention to this important topic.

Sincerely,
Ms. Nancy Oaks

Mr. Tim Tramutt
400 Zang St
Lakewood, CO 80228-1021
(720) 560-4747

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: We need water

Dear John Hickenlooper and Water Board Members,

Dear governor and water board,

As far as funding goes, could monies be funded from the medical marijuana industry? It takes a lot of water to grow marijuana. According to the Press Democrat, "Researchers estimate each plant consumes 6 gallons of water a day. At that rate, the plants were siphoning off 180,000 gallons of water per day in each watershed--all together more than 160 Olympic-sized swimming pools over the average 150-day growing cycle for outdoor plants." Can money that's profited from the Colorado medical/recreational marijuana industry somehow be put back into the Colorado water plan?

Sincerely,
Mr. Tim Tramutt

Mr. Guy S And Toni Lopez
745 La Farge Ave
Louisville, CO 80027-1821
(907) 344-8182

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan Guiding Principles

Dear John Hickenlooper and Water Board Members,

All plans need to be based on the long term benefits for the general public; not for short term gain for special interest groups.

Sincerely,
Mr. Guy S And Toni Lopez

Mr. John Feider
1355 Thomas Cir
Woodland Park, CO 80863-2372
(719) 687-3274

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Please take the most appropriate actions to secure our water future. Our water supply and quality is too precious of a commodity to be taken too lightly.

Thank you for your concern.

JAF

Sincerely,
Mr. John Feider

Mr. Ka Lemon
3321 S Monaco Pkwy Apt C
Denver, CO 80222-7668
(303) 683-1753

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Without water Colorado is not Colorado. Water in Colorado means farming, recreation, and ranching, as much or more than ever expanding cities with their jobs. Developers need to include water and how it gets paid for in their development plans, cities need to tighten restrictions and limitations and expect developers to do the same, and residents needs to be educated and retrained that this is a high desert climate and plant and landscape accordingly, as well as minimize inside usage with water-saving devices.

A solution needs to be found so that farmers aren't selling their water rights to out-of-state entities or even to growing cities in Colorado. Dams are not a solution. And farmers need to use the newest and most water-efficient technologies available and if they need financial assistance to make happen, it needs to be provided. It would be nice too if fertilizer and chemicals could be reduced and restricted to keep them from getting into the water both directly and indirectly into aquifers.

There should be enough water for everyone if it is treated with respect and used accordingly with a proper plan.

Thank you.

Sincerely,
Mr. Ka Lemon

Mr. Eric Gricus
522 W Hackberry St
Louisville, CO 80027-9547

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Water is a critical resource in the state of Colorado. Please protect our rivers and the ecosystems that depend on them.

Please increase the emphasis on common sense conservation instead of only increasing the supply of water at tax payers expense. Much can be done to reduce water usage in the state. I would like to see recreational values considered in the plan as well.

It is important to me as a voter and taxpayer to see these recreational interests protected and also financially supported by my tax dollars. The budget for stream management and recreational improvements needs to be revisited and increased.

Thank-you

Sincerely,
Mr. Eric Gricus

Mr. Jerry Dauth
1925 Serramonte Dr
Fort Collins, CO 80524-1713
(970) 493-2503

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

We don't want to follow California's example of waiting until the last minute before implementing water use. Lets set specific targets now for more efficient water use and make sure that we have sufficient management over-site to see that the efficient standards are being achieved. We also need to set reasonable criteria for water usage for follow-on projects so that long term water demands and supply are in balance. Thank you

Sincerely,
Mr. Jerry Dauth

Ms. Suzann Thomas
2272 Jasmine St
Denver, CO 80207-3918
(303) 333-9644

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Water is already scarce in many parts of the globe. Please be conscious and do more to ensure that water is safe and available for Colorado! Can u not see the handwriting on the wall here?

Sincerely,
Ms. Suzann Thomas

Ms. E R
1 Last Dollar Pass
Littleton, CO 80127

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Please expand this plan to ensure it will protect the availability of water in our state indefinitely.

Sincerely,
Ms. E R

Mr. Michael Crane
420 Parkway Cir N
Fort Collins, CO 80525-3881
(605) 339-7245

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Because Colorado is characterized largely by arid and semi-arid environments, there should be restrictions on the use of freshwater resources. No use of potable surface and groundwater should be allowed for mining and fracking activities in Colorado. There are aquifers throughout the State that are unsuitable for public consumption and agriculture that would be appropriate for mining and fracking activities. It would also be prudent for the State to look at the carrying capacity of all resources needed to support its present and future populations and economic activities to insure they are in balance. Also, water storage projects need to factor in losses due to evaporation and seepage into pervious rock strata. Not all water storage projects are practical.

Sincerely,
Mr. Michael Crane

Mr. Stan Hayes
3448 Congress St
Montrose, CO 81401-7359
(970) 240-3505

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Please address the following:
(1) The plans urban conservation goals lack implementation specifics.
(2) Additional funding for stream management & restoration is needed.
(3) Specific screening criteria for new water projects is needed so that projects move forward only if they benefit our communities and agriculture and are an improvement to the health of the lake and/or river.

Sincerely,
Mr. Stan Hayes

Ms. Darla Daniel-Seabolt
9630 W Chatfield Ave Unit F
Littleton, CO 80128-5059
(720) 384-5443

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Please keep the people of Colorado in mind, as you vote on this Water Plan. We don't want to regret it later.

Thank you for all you do for us.

Sincerely,
Ms. Darla Daniel-Seabolt

Mrs. Carolena Larsen
2918 Villa Loma Dr
Colorado Springs, CO 80917-3748

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

It doesn't take a rocket scientist to realize that water has become so precious and is a daily commodity that people take for granted. Please enforce clean water and allow future generations to be able to have in abundance this colorless, transparent, odorless, tasteless liquid that gives life to all living organisms.

Sincerely,
Mrs. Carolena Larsen

Mr. Tarey Archer
736 1/2 1575 Rd
Delta, CO 81416-3246
(970) 874-6337

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Please do the right thing so future generations may enjoy our natural resources!!!

Sincerely,
Mr. Tarey Archer

Mrs. Judy Young
PO Box 39353
Denver, CO 80239-0353

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

I am not a politician or public speaker but I am concerned about the future of safe water. I drink on average 6-8 glasses a day and I'd like feel confident that the water I need to drink is safe.

We need more specifics, like how will the screening process for the project work for the future to benefit my community and funding no doubt is a huge concern. Will higher taxes or do we already have it budgeted?

Sincerely,
Mrs. Judy Young

Ms. Kathy Glatz
1780 S Raritan St
Denver, CO 80223-3727
(720) 233-4567

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

The second draft of the Colorado Water Plan, released in July, is flowing in the right direction. From setting a conservation goal to reducing water use in our cities and towns, to acknowledging that certain protections are needed to keep our rivers healthy, the second draft shows promise. However, much remains to be done:

(1) Substantial funding for stream management and restoration is needed. Only $1 million has been allocated for stream management plans. That amount is simply inadequate to productively manage tens of thousands of miles of Colorado's rivers. The Animas is a perfect example!

(2) The plan sets a common-sense urban conservation goal of approximately 1% per year water use reduction. To achieve this important goal, infrastructure improvements, technological innovations and behavioral changes in Colorado will need to occur. Help the state identify specific measures to encourage more efficient urban use of our limited water resource.

And (3), specific screening criteria for new water projects the state invests in are needed so that projects move forward only if they benefit our communities, rivers and agriculture.

Sincerely,
Ms. Kathy Glatz

Mr. Travis Scott
6800 Doe Valley Rd
Guffey, CO 80820-9641

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

You MUST take ALL steps to secure the waters of Colorado stay here in Colorado and instate water restrictions NOW to save what we have. STOP ALL LAWN WATERING! and golf courses should ONLY use reclaimed water !!!

Sincerely,
Mr. Travis Scott

Ms. Paula S Bourgeois
108 Cedar Trl
Woodland Park, CO 80863-8600
(719) 687-8726

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

The plan's urban conservation goals lack implementation specifics.

Specific screening criteria for new water projects are needed so that projects move forward only if they benefit our communities, rivers and agriculture.

Substantial funding for stream management and restoration is needed.

We have the benefit here in Colorado of having good water.....we need to see that any plan and it's development keeps that first and foremost in it's structure....do it right the first time....don't create problems that will just have to be fixed

Sincerely,
Ms. Paula S Bourgeois

Mr. John Nienstadt
1915 Pine Mesa Grv
Colorado Springs, CO 80918-3653
(612) 201-5431

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

To whom it may concern,

Colorado needs a plentiful supply of good clean water.

I feel that your plan needs more specifics regarding protecting and cleaning up the water sources that exist:

* Plugging up old uranium test drilling sites
* Cleaning up and securing old mine sites
* Keeping agriculture and industrial wastes out of our streams and rivers
* Regulating the coal industry more
* Planting more trees, shrubs and other plants to keep top soil in check. Plants also attract water.

In this age of global warming water has become an issue world wide. Colorado needs to protect and preserve our precious water and environment!!!! What we do here effects the rest of the country and the world. Let us be leaders in the protection of this earth.

Sincerely,
Mr. John Nienstadt

Ms. Susan Lea
13760 County Road 261
Nathrop, CO 81236-7729
(719) 207-2034

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Rather than intentionally polluting and destroying natural rivers like we saw with the Gold Mine disaster 2 weeks ago, let's do what it takes to support and ensure healthy, vital and clean natural water. Please!!

Sincerely,
Ms. Susan Lea

Ms. Randi Doeker
3700 E Jewell Ave Apt 433
Denver, CO 80210-3761
(773) 538-6393

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Take the word "stretch" out of the Water Plan. It's just a built-in excuse when the 1% conservation goal isn't met.

Sincerely,
Ms. Randi Doeker

Dr. James Gerweck
2536 Banbury Ln
Fort Collins, CO 80524-2671
(303) 775-5710

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Dear Sirs,

It is time to initiate a truly effective water plan for Colorado. First and foremost, conservation should be 1st on the list. While it is impossible to limit growth, it is possible to to use water effectively. Demand the strictest water conserving methods available to farmers. Limit crops that are not regionally viable and use excessive water-tax them. Limit wasteful home use-maybe it's time to stop watering lawns where grass and shrubs are not native. Demand reuse of water in the oil and gas industries.

The time of dam building is over and its ineffectiveness and negative effects on the environment are well documented. Do not further tap our rivers and streams and consider retaining more Colorado water in Colorado. Do we really need to subsidize growth and water waste in other states?

Sincerely,
Dr. James Gerweck

Ms. Sharon Karson
3630 N Carefree Cir
Colorado Springs, CO 80917-2031
(719) 591-0236

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

While the second draft of the Colorado Water Plan is much improved, it still needs the following improvements:

(1) Substantial funding for stream management and restoration is needed. Only $1 million has been allocated for stream management plans. That amount is simply inadequate to productively manage tens of thousands of miles of Colorado's rivers.

(2) The plan sets a common-sense urban conservation goal of approximately 1% per year water use reduction. To achieve this important goal, infrastructure improvements, technological innovations and behavioral changes in Colorado will need to occur. A strong education program to make users aware of how importnt this issue is; we also need strong incentives for conservation (for example higher costs for higher usage and tax credits or rebates for improvements that reduce usage; low cost loans for said improvements would also be helpful.) All of these programs are crucial to making this element of the plan work And

(3), specific screening criteria for new water projects the state invests in are required so that projects move forward only if they benefit our communities, rivers and agriculture.

Water conservation is a critical issue now, and will only become more so as the effects of global climate disruption become exacerbated. We must act now to prevent a major crisis in the near future.

Sincerely,
Ms. Sharon Karson

Mr. Richard Creswell
2557 S Dover St Apt 88
Lakewood, CO 80227-3161
(720) 963-9163

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

I approve the water management plan but it needs a few additions. First, sufficient funding for restoration and stream management needs to be put in place. Urban conservation needs to move to lawn-free cities. Finally criteria for new water projects should be screened so that only those plans that benefit communities, rivers, and agriculture move forward.

Sincerely,
Mr. Richard Creswell

Ms. Loretta Banta
56 S Raleigh St
Denver, CO 80219-1848
(303) 936-5742

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Colorado's water is a limited resources. Therefor, the state cannot continue to build houses forever. The plan must consider limits to growth, as well as conservation and riparian management. All water projects must be graded against, and meet, a clear set of standards before they get out of the planning stage.

Sincerely,
Ms. Loretta Banta

Mr. Marcus Lanskey
7923 S Trenton St
Centennial, CO 80112-3320
(206) 339-7730

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

The Colorado Water Plan currently under development must provide substantial funding for stream management and restoration is needed. Only $1 million has been allocated for stream management plans. That amount is simply inadequate to productively manage tens of thousands of miles of Colorado's rivers.

Although, the plan sets a common-sense urban conservation goal of approximately 1% per year water use reduction, to achieve this important goal, infrastructure improvements, technological innovations and behavioral changes in Colorado will need to occur. The state should encourage more efficient urban use of our limited water resource by instituting a Grass Green Gauge program similar to the Eugene Water and Electric Board's program in Eugene, OR.

Specific screening criteria for new water projects the state invests in are needed so that projects move forward only if they benefit our communities, rivers and agriculture.

Sincerely,
Mr. Marcus Lanskey

Ms. Linda Graae
309 E Swallow Rd
Fort Collins, CO 80525-2541
(970) 488-9199

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

ABSOLUTELY POSITIVELY N O NO N O NO water to EVER be used for fracking

Sincerely,
Ms. Linda Graae

Mr. Glenn Whiteside
16338 Windy Creek Dr
Monument, CO 80132-7427
(719) 963-2166

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

(1) The plan's urban conservation goals lack implementation specifics.

(2) Substantial funding for stream management and restoration is needed.

And (3), specific screening criteria for new water projects are needed so that projects move forward only if they benefit our communities, rivers and agriculture.

More must be done to make the plan the guide it needs to be to protect water for the future of Colorado.

Sincerely,
Mr. Glenn Whiteside

Mr. Leroy Frankel
15 Texas Ln
Longmont, CO 80501-6923
(303) 774-0102

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

The second draft of the Colorado Water Plan, released in July, is flowing in the right direction. From setting a conservation goal to reducing water use in our cities and towns, to acknowledging that certain protections are needed to keep our rivers healthy, the second draft shows promise. However, much remains to be done:

(1) Substantial funding for stream management and restoration is needed. Only $1 million has been allocated for stream management plans. That amount is simply inadequate to productively manage tens of thousands of miles of Colorado's rivers.

(2) The plan sets a common-sense urban conservation goal of approximately 1% per year water use reduction. To achieve this important goal, infrastructure improvements, technological innovations and behavioral changes in Colorado will need to occur. Help the state identify specific measures to encourage more efficient urban use of our limited water resource.

And (3), specific screening criteria for new water projects the state invests in are needed so that projects move forward only if they benefit our communities, rivers and agriculture.

Sincerely,
Mr. Leroy Frankel

Mrs. Denise Shoaf
5212 Mt Audubon St
Frederick, CO 80504-3406
(720) 296-9205

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Dear Governor,

We have got to make the water plan more specific. Details and credits for xeriscaping home front and backyards must be included. Water is our most precious resource on the planet. Without it, we are not sustainable, plants are not sustainable, the planet is not sustainable. Please, please be specific with regards to urban water usage. Watering lawns should be a thing of the past. Let's make that an ancient practice and get rid of it.

Thank you caring,

Denise Shoaf
Concerned for Water in Colorado

Sincerely,
Mrs. Denise Shoaf

Mr. Aniello Sarno
3227 S Washington St
Englewood, CO 80113-2727

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Keep Colorado waterways clean for today and the future.

Sincerely,
Mr. Aniello Sarno

Dr. Richard and Jill Hoehlein
602 Powderhorn Trl
Hesperus, CO 81326-6701
(970) 259-0648

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

water plays an important role in our state's way of life, the second draft of the Colorado Water Plan, released in July, is flowing in the right direction. It was important to set a conservation goal to reduce water use in our cities and towns, to acknowledge that certain protections are needed to keep our rivers healthy, this second draft shows promise.

However - more needs to be done with
(1) The plan's urban conservation goals lack implementation specifics.

(2) Substantial funding for stream management and restoration is needed.

And (3), specific screening criteria for new water projects are needed so that projects move forward only if they benefit our communities, rivers and agriculture.

Sincerely,
Dr. Richard and Jill Hoehlein

Mrs. Holly Currens-Wray
407 S 5th St
Westcliffe, CO 81252-8587
(719) 783-4333

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

I'm highly encouraged that this will be a long reaching and effective water plan. I worry about
the states commitment to real change and protections of our western water. I't concerns me when I travel to some front range communities and see the wasted watering of sidewalks and no or very little restrictions of it's use. We need to be financially prepared for changes in our enforcement of new rules, new technology for more efficient use and the possibility of environmental mishaps that need emergency attention. We need to keep our water in our agricultural areas so they can still be viable food producers. Drastic steps may be in order to accomplish some of these goals but i believe the time is right for it.
I hope this becomes a model long lived plan producing well thought out good result for our water future

Thanks for listening.

Sincerely,
Mrs. Holly Currens-Wray

Ms. Jen Schroers
9662 Brentwood Way
Westminster, CO 80021-5341
(248) 622-7003

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Please work to conserve water, it is our most precious resource.

Sincerely,
Ms. Jen Schroers

Ms. Ashley Mcfarland
1626 N Logan St
Denver, CO 80203-1238
(816) 520-6712

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Make cities conserve water and use low flow utilities!

Sincerely,
Ms. Ashley Mcfarland

Ms. Toby Schunk
PO Box 664
Niwot, CO 80544-0664
(303) 776-6007

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Please emphasize conservation and preservation of our wonderful natural resources over development, agriculture and industrial uses of water.
Thank you!

Sincerely,
Ms. Toby Schunk

Dr. Jason Widegren
30 Canyon Cedar
Littleton, CO 80127-3532

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

I use about the same amount of water keeping my lawn green as I use for all other purposes during the year. I would happily replace most of my grass with xeric plants, but my homeowners' association forbids it! Surely there is a better way here. I would like the Colorado Water Plan to include some kind of common sense rules that allow all homeowners the option to use landscaping that conserves water.

Sincerely,
Dr. Jason Widegren

Ms. Elizabeth Bossert
2225 Witter Gulch Rd
Evergreen, CO 80439-4503

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Clean water is so important to our health and the health of the environment. Much of our state relies on tourism and if we have stories like the one about the Gold King mine all over the news people won't come visit. Please protect our water as much as possible. So much is riding on it!

Sincerely,
Ms. Elizabeth Bossert

Mrs. Betsy Leonard
71 River View Pl
Parachute, CO 81635-9641
(970) 285-9874

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Dear Members,

I applaud you on producing a second draft for the Colorado Water Plan. It is a critically important plan for our state. I urge you to write specifics into the Water Plan in order to implement urban conservation goals. It is one thing to support healthy rivers, but monies must be made available for adequately managing streams and funding necessary restoration projects. Finally, specific screening for new water projects is needed so that projects move forward only if they benefit our communities, rivers, and agriculture.

Thank you for considering my remarks.

Betsy A. Leonard
Environmental Education Specialist, Retired

Sincerely,
Mrs. Betsy Leonard

Ms. Zanna Joseph
8320 W 87th Dr Apt E
Arvada, CO 80005-1634
(303) 918-8386

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

There are so many harmful things going on in our environment, don't make it worse. I myself have been in Colorado since i was five. I've heard that fires are starting and oil is spilling and all about the poor animals out there. Please don't make us afraid to drink our own water. Support the now as well as the future. I know there is a lot to figure out, but I hope you can push hard toward our safe water supply.

Thank you,
Zanna Joseph

Sincerely,
Ms. Zanna Joseph

Mrs. Charlotte Jecminek
1352 S Peoria Ct
Aurora, CO 80012-4238
(303) 755-6479

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

We need to think of our water as a very presious commoditie

Sincerely,
Mrs. Charlotte Jecminek

Mr. Thomas Thirion
PO Box 428
Ignacio, CO 81137-0428
(970) 403-9256

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

The old mining laws in Colorado has left us with some of the WORST and most archaic water harvesting laws in the U.S. These laws need to be changed drastically so people can use the latest water harvesting methods of building earthworks and/or catchments to divert and retain water that falls on their own property to grow food and vegetation. Water harvesting not only cleans and filters storm runoff, but keeps chemicals out of sewers and waterways while reducing the load of municipal water districts--- enabling municipalities to make needed repairs to old leaky systems.

I urge you to consider legalizing rainwater harvesting!
Thomas Thirion
Director
'Green Peace Corps' organization

Sincerely,
Mr. Thomas Thirion

Mrs. Connie Haynes
PO Box 3147
Nederland, CO 80466-3147
(720) 296-8477

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Demanding that the normally cautious Colorado public use 1% less water is insulting at the least. In the recent past the board toyed with allowing a foreign company to bottle water in Aurora where water was most scarce. The water run off program is also disgusting. We used to be able to have rain barrels to collect rainwater during times of drought. That was all done away with in a" deal" with California that was done under wraps.This is the first time I know of that the public was even asked for more than a vote. Those votes were passed by numbers of citizens who really were not aware of the issue much less the ramifications thereof. More public attention and time to get word out is what I would like to see as well as public debates on local tv. Just don't make a law that affects so many just to be looking productive. Sometimes its better to take the time ti take thy time.

Sincerely,
Mrs. Connie Haynes

Ms. Kathleen Nelson
5900 E 1st Ave
Denver, CO 80220-5901
(303) 322-6292

Aug 26, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Keep our rivers strong and healthy. Do much more recycling of water. I catch water under my kitchen faucet with a milk bottle to recycle and have a bucket in my shower to catch water as I shower. I have lots of milk bottles full of water to water plants inside and outside. Pass along recycling information to the public.
Kathleen

Sincerely,
Ms. Kathleen Nelson

Ms. Margaret Hutchison
1590 S Ogden St
Denver, CO 80210-2733
(303) 722-2222

Aug 27, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Hi,

It has been brought to my attention that not near enough has been done to make the plan be the guide that it needs to be to protect water for the future of our state.

We only have ourselves to depend on. There is no magic out there any place that will make water just appear on demand. So please make the plan be the guide that it needs to be to protect water for the future of our grand state.

Thank you so much.

Margaret Hutchison

Sincerely,
Ms. Margaret Hutchison

Mr. Douglas Henderson
312 Arlene Dr
Fort Collins, CO 80521-2166
(970) 227-9259

Aug 27, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Colorado needs a strong plan to address and resolve the growing gap between water supply and escalating demand, both in the immediate future and especially beyond that to ensure that ecosystems and future generations have adequate water.

To strengthen the Colorado Water Plan,

- Urban conservation goals need to contain implementation specifics.

- Stream management and restoration need a solid commitment of substantial funding.

- Specific criteria for new water projects are needed to prioritize projects that benefit our communities, rivers, and ecosystem health and sustainability.

- Fracking poses a grave threat to Colorado's water resources, by ruining groundwater, polluting surface water, and using and degrading a huge amount of water that will make it unavailable and forever un-usable for other purposes. Will the Colorado Water Plan honestly address the impact of fracking on the state's water resources, and the lasting damage that fracking will cause to Colorado's cherished water resources?

Sincerely,
Mr. Douglas Henderson

Mrs. Jessica Turner
4623 S Field St
Denver, CO 80123-1806

Aug 27, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Please help protect the future of our state!

Sincerely,
Mrs. Jessica Turner

Mr. Douglas Henderson
312 Arlene Dr
Fort Collins, CO 80521-2166
(970) 227-9259

Aug 27, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Colorado needs a strong plan to address and resolve the growing gap between water supply and escalating demand, both in the immediate future and especially beyond that to ensure that ecosystems and future generations have adequate water.

To strengthen the Colorado Water Plan,

- Urban conservation goals need to contain implementation specifics.

- Stream management and restoration need a solid commitment of substantial funding.

- Specific criteria for new water projects are needed to prioritize projects that benefit our communities, rivers, and ecosystem health and sustainability.

- Fracking poses a grave threat to Colorado's water resources, by ruining groundwater, polluting surface water, and using and degrading a huge amount of water that will make it unavailable and forever un-usable for other purposes. Will the Colorado Water Plan honestly address the impact of fracking on the state's water resources, and the lasting damage that fracking will cause to Colorado's cherished water resources?

Sincerely,
Mr. Douglas Henderson

Ms. Kathy Martinez
5395 S Logan Dr
Greenwood Vlg, CO 80121-1213
(303) 789-1669

Aug 27, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Think of the future.

Sincerely,
Ms. Kathy Martinez

Mr. Richard Spratley
6400 Lookout Rd
Boulder, CO 80301-3377

Aug 27, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Please use your heads. Don't allow votes to influence your decisions.

Sincerely,
Mr. Richard Spratley

Ms. Elizabeth Smith
2225 Lewis St
Lakewood, CO 80215-1336
(303) 274-7951

Aug 27, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Thank-you for all of the work you have done to do what is right in the face of competing interests. Please coninue your good work by insisting on specfic goals for urban conservation so that something actually gets done. Also, money/funding is crucial if streams and rivers are really going to be restored and managed --- otherwise, as you know, nothing will really happen. Finally, please make sure there are screening criteria for the review of new water projects. This is necessary to insure that any proposed project will truly benefit the communities impacted, the rivers we need to protect, and our farmers. Thanks again for all of your hard work.

Elizabeth Smith, Wheat Ridge

Sincerely,
Ms. Elizabeth Smith

Mr. Dave Stidger
3602 S Jebel Cir
Aurora, CO 80013-6625

Aug 27, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

I feel that there is too many people coming into the Denver area and that there will not be enough water to meet the needs of this increase in population.

Sincerely,
Mr. Dave Stidger

Mr. Jake Hodie
145 Starwood
Aspen, CO 81611

Aug 27, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

So many of our waters have already been ruined by development, drilling, pollution, and humans.
Enough is enough!
Our waters are supposed to be a place of peace and quiet for us, and the fish and wildlife which live in them!
The animals are running out of places to live and be safe. Our fish and wildlife are under threat from so many angles. They desperately need to be protected, mainly from humans.
Life is hard enough for people, let alone the animals.
Can't we please offer them some much needed help?!
PLEASE save the waters for all future generations before they are permanently ruined. Some damage cannot be undone!

The proposed Colorado Water Plan needs improvement on the following:

(1) The plan's urban conservation goals lack implementation specifics.

(2) Substantial funding for stream management and restoration is needed.

And (3), specific screening criteria for new water projects are needed so that projects move forward only if they benefit our communities, rivers and agriculture.

Thank you for your time.

Sincerely,
Mr. Jake Hodie

Ms. Wilma Mcclain
519 Juniper Pl
Cortez, CO 81321-4082
(303) 880-2698

Aug 27, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

The Colorado Water Plan has merit and it needs to include urban conservation goals with implementation specifics. Substantial funding for stream management and restoration is also needed. Specific screening criteria for new water projects are needed so that projects move forward only if they benefit our communities, rivers and agriculture. Colorado needs a well thought out Water Plan.

Sincerely,

Wilma McClain
519 Juniper Pl.
Cortez, CO 81321

Sincerely,
Ms. Wilma Mcclain

Mr. Dale Goodin
10893 W Dartmouth Ave
Lakewood, CO 80227-5612
(303) 989-0501

Aug 27, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Contact water dowsers to locate underground streams (not aquifers) for long term water sources.

Sincerely,
Mr. Dale Goodin

Mr. Tom King
2910 Chennault Rd
Monument, CO 80132-8110
(719) 481-8462

Aug 27, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Each year one sees the rain and snow fall on our towns and cities, then evaporate or run off the urban asphalt streets, concrete sidewalks/driveways, and tiled roofs. The 16.5 inches of precipitation Denver receives each year disappears into the storm drains on its way to the Gulf of Mexico. Denver covers 155 square miles of which approximately 98 square miles are impervious to water absorption back into the ground. That 16.5 inches of rain and snow on the impervious 98 square miles prevents 26,574,3860,610 gallons of water from recharging Denver's ground water. Even if 20% of that precipitation were lost to evaporation, that would be 21,259,504,488 gallons that did not recharge Denver's ground water each year.

For every drop of rain that ordinarily would have been capture naturally, that drop is now being imported from somewhere else in Colorado. To stop this taking of more and more water from outside the urban areas, the Plan needs to have a goal to capture the urban runoff to recharge Colorado's ground water which then can be reused.

Retention, Recharge and Reuse is a proven concept being done around the world, why not here?

http://akvopedia.org/wiki/3R_(water)__Recharge,_Retention_and_Reuse

Sincerely,
Mr. Tom King

Dr. Cynthia Gray
5225 White Willow Dr Apt Q220
Fort Collins, CO 80528-5079
(970) 689-3424

Aug 27, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

More than ever, we need those with bold insight into water conservation to help avoid chaos and acrimony among citizens of our fine State. Please take careful notice of Sierra Club's "Conservation Essentials" to assist you. It is not an extremist document. It is the result of thoughtful, educated minds that see a way to conserve in the best spirit of collaboration and foresight. Let us be an innovative State at a time when our country needs water conservation plans and leaders.

As a Native Coloradan, who's family has lived in Colorado for over 100 yrs. I am depending on leaders like you to use the wisdom provided by citizens who want to be a part of the solution, who want to help. It will take bold conservation moves. I believe you are up to it Gov. Hickenlooper. Please don't let me down.

Best regards.

Sincerely,
Dr. Cynthia Gray

Dr. John Shepherd
2160 Dartmouth Ave
Boulder, CO 80305-5206

Aug 27, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Please consider and implement the Sierra Club recommendations for the CO Water Plan.

Sincerely,
Dr. John Shepherd

Mrs. Dinah Rpgers
52 Trappers Dr
Pagosa Springs, CO 81147-7849

Aug 27, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

I have lived in Denver for 56 years, and in SW Colorado for 10 years. Our water concerns are always an issue. We stressed conservation of water to our kids.
We need a strong and specific urban plan for cities re: the health of our water systems and for serious conservation. Waste needs to be controlled by specific limitations on water usage for watering, household use, agriculture, businesses and recreation. There needs to be mandatory evaluation and requirements on proposals of all projects that demand water. Projects should be limited to those shown to be of benefit to our cities and communities, farmers/ranchers and our healthy water sources. Education, guidelines and specific restrictions need to be in place to maximize reduction of water waste. For example, lawn and yard watering should be on scheduled days & appropriate times. Xeriscaping should be strongly encouraged, using 'water-wise" plants and lawn grasses. Water leaks should be tracked and fixes ASAP.

We need appropriate funding to correctly manage our essential water sources - our streams and rivers. Clean healthy water is essential to our State's economy, our citizens, health and agriculture use, our rural areas, wildlife and recreation. It is essential to everyone. Colorado contains our own major SOURCES of our water supply. We are responsible for protecting and managing our water for the future of Colorado as well as for those downstream, who appropriate water from us.
Please - Gov. Hickenlooper and the Water Board: Create a Strong Colorado Water Plan to protect the future of our State. The time is NOW.

Sincerely,
Dinah Rogers
52 Trappers Dr.
Pagosa Springs, CO 81147

Sincerely,
Mrs. Dinah Rpgers

Mr. Paul Stettner
1367 Anglers Dr
Steamboat Springs, CO 80487-8823
(970) 879-1986

Aug 27, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

June 17, 2015
Living within our resources

To: Governor John Hickenlooper

I commend your directive to get on with development of the Colorado State Water Plan. After attending several Yampa-White-Green Roundtable meetings it is obvious that this is a major challenge.

What I do not support or understand is that perpetual industrial and commercial growth (mainly on the east Slope) with the appurtenant population growth and demand on finite water resources continues to be strongly encouraged and cheered while the Plan is in process. Studies all acknowledge, and I believe it is commonly agreed, that there will be a water deficit in the relatively near future. So, while we are in the process of addressing the issue of a water deficit, it does not seem logical to continue to encourage growth.

Perpetual population growth, inevitably results in ever-increasing demands on a limited water resource. This is an unsustainable scenario because;
* The amount of water produced by surface waters is limited and highly variable,
* Mining groundwater (eg: the Ogallala) continually lowers aquifer levels,
* The viability of new trans-mountain diversions become riskier as legal battles over the Colorado River Compact loom. Water levels continue to drop in Lake Powell & Lake Mead as upper basin states cannot meet their contribution responsibilities.

How do we get our legislators to understand basic science and begin to seriously address the political 3rd rail of relating growth and water resources? To begin, our elected officials need to be informed and educated about water issues, need to understand) difficult scientific facts, be realistic and not be driven solely by economic forces whose only interest is growing more business regardless of the consequences. The need is to plan, NOW, for the long term instead of just the next quarter's profit. Many West Slope politicians say, "I will fight for our water" typically without providing any strategic or tactical details.

What is the scenario for Colorado without perpetual growth? I doubt

that we would shrivel up and regress if we begin to manage growth, ie: require each new growth project to prove ownership of an adequate, reliable/sustainable water supply prior to approval.

It is imperative that we plan ahead wisely NOW in order to avoid panic fixes, expensive legal battles, and, the potential for Federal intervention.

Engineering can solve many problems but cannot generate more water locally it would have to be imported. From where, how much would it cost, how reliable?
To paraphrase Will Rogers; he said something to the effect, (better buy land cause they ain't makin any more of it). The same holds true for water.

I have worked in Turkey and Iran on water-related projects, and traveled in the Middle East where I've seen numerous areas that had flourished until they were overpopulated and the water ran out. Now they are abandoned cities and piles of rocks poking out of the desert sand.
SAD

Respectfully,

Paul Stettner, MSCE
Steamboat Springs, Colorado

Sincerely,
Mr. Paul Stettner

Mrs. America Sherwood
7139 S Elm Ct
Centennial, CO 80122-2425
(847) 239-0236

Aug 27, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Dear Governor,

I know your heart is in the right place when it comes to Colorado's conservation and protection of our water supply. You need to stay ahead of the game by consulting with environmental scientists with the same protective instincts as you have in order to come up with an ethical plan for our precious water supply. Please hold planning discussions to become acquainted with numerous options that would not put our water supply at risk.

Sincerely,
Mrs. America Sherwood

Mr. Andrew Melvin
1067 N Marion St
Apt 5
Denver, CO 80218-4323
(203) 253-4957

Aug 27, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Protecting Colorado's waters is not only critical for ensuring that the citizens of Colorado have safe and plentiful water for survival, but are also critical for our economy. Much of the high country's summer economy is driven by people utilizing the rivers for recreation and is a major draw for tourism. It is critical that we maintain exemplary protection of our waterways ensuring our fisheries stay healthy and thrive. This has the added benefit of maintaining a healthy ecosystem promoting species of all kinds.

It must be the highest priority to protect our waterways. If farming or urban requirements outpace a safe supply, it is critical that we develop a plan to deal with this. We will not be getting more water and further depleting our already deprived rivers is not an option so finding ways to deal with our existing supply is the only option. If we cannot sustain certain lifestyles, be it residential, agricultural or industrial, then these are not appropriate uses for our state. Changing lifestyles can have a short term pain but if it leads to sustainability, it is a win and can benefit Colorado in the long term. Please do all you can to promote water conservation, clean and healthy waterways, and a thriving Colorado ecology.

Sincerely,
Mr. Andrew Melvin

Miss Karen Jones
4731 W Yale Ave
Denver, CO 80219-5650
(303) 922-2341

Aug 27, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Water is the life force for ALL Life.
Water plays an important role in our state's way of life. There is a growing gap between supply and demand. This demand will only grow with global warming. Colorado needs a strong plan to ensure that the next generations will have a secure water future.
I find that the second draft of the plan that:

1. Urban conservation goals lack implementation specifics.
2. Substantial funding for stream management and restoration is needed.

3. Specific screening criteria for new water projects are needed so that project mover forward only if the benefit our rivers, agriculture and communities.

We need to move away from the concepts "green grass lawns" as the norm.

Sincerely,
Miss Karen Jones

Mrs. Catherine Beauchamp
5239 Hahns Peak Dr Apt 102
Loveland, CO 80538-8874
(225) 229-2559

Aug 27, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

The second draft of the Colorado Water Plan, released in July, is flowing in the right direction. From setting a conservation goal to reducing water use in our cities and towns, to acknowledging that certain protections are needed to keep our rivers healthy, the second draft shows promise. However, much remains to be done:

(1) The plan's urban conservation goals lack implementation specifics.

(2) Substantial funding for stream management and restoration is needed.

And (3), specific screening criteria for new water projects are needed so that projects move forward only if they benefit our communities, rivers and agriculture.

Sincerely,
Mrs. Catherine Beauchamp

Ms. Janice Niblack
19510 Crows Nest Way
Monument, CO 80132-9413
(719) 488-3669

Aug 27, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

What you need to do is MAKE SURE the Ogallala Aquifer DOES NOT GET POLLUTED WITH FRACKING WASTE!

If you think the Animal spill was bad, think how many of us Coloradoans will be affected if we can't drink from the Ogallala Aquifer!

This means you have to stand up to the oil industry.

Sincerely,
Ms. Janice Niblack

Ms. Kimberly Musselman
3745 N State Highway 67
Sedalia, CO 80135-8960
(303) 688-3648

Aug 27, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

In all sincerity- by definition, Colorado is a semi-arid desert. water is not only going to Colorado's challenge- but ultimately the World. Where exactly are we getting the water to support the growth of our state?? Perhaps there should be mandated rules and regulations regarding water conservation in every household despite if we are in a drought pattern?? There are SOOOOO many options for each and every one of us to exercise on a daily basis. Maybe put restrictions on limiting golf courses?? How many square feet of a lawn is permitted?? The possibilities are endless and I feel we are taking the "path" of least resistance!!

Sincerely,
Ms. Kimberly Musselman

Dr. Cathrine Floyd
7623 S Franklin Way
Centennial, CO 80122-3113
(303) 794-3450

Aug 28, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Please leave the Arctic alone! We have already done so much damage to the earth.

Sincerely,
Dr. Cathrine Floyd

Mr. Benjamin Thomas
1440 Edora Rd
Fort Collins, CO 80525-1267
(970) 231-7937

Aug 28, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

We need to enact more water conservation education programs.

Sincerely,
Mr. Benjamin Thomas

Mr. Steven Mason
11014 Cannonade Dr
Parker, CO 80138-7278

Aug 28, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Dear Governor Hickenlooper and Water Board Members:

As I'm sure everyone is aware, we, the residents of Colorado are outraged by the recent EPA disaster near Durango. In order to hold the violators accountable, as well as prevent such atrocities in the future, it is imperative we reevaluate the Colorado Water Plan.

As it stands now, the CO Plan, as it pertains to urban conservation goals, lacks implementation specifics therefore needing assurance that this plan is in the best interests of CO residents and not potential violators and/or abusers of our resources.

There needs to be clear policy to ensure substantial funding for stream management and restoration.

Lastly, specific screening criteria for new water projects are needed so that projects are able to move forward only if such benefit communities, rivers, and agriculture.

Thank you all for attention to this matter and we desperately hope you will act in the best interest of the residents of Colorado.

Sincerely,
Mr. Steven Mason

Mr. Ed Guhman
2426 N Williams St
Denver, CO 80205-5524

Aug 28, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Thank you for your efforts to ensure we protect the future of our beautiful state by protecting our precious and often scarce supplies of water.

I would urge you to include in the Colorado Water Plan the following:

1. consistent allocation of resources to asses and protect our rivers
2. implementation of a mandatory municipal water reduction goal of 15% by 2020
3. modernization of agriculture water usage
4. assure that any new water diversion projects are off the table

Thank you

Ed Guhman

Sincerely,
Mr. Ed Guhman

Dr. Robert Green
PO Box 2040
Ridgway, CO 81432-2040
(970) 626-5245

Aug 28, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

1. Presumably, the initial funding of one million dollars is only the first installment, since this a totally inadequate amount.
2. Since water is the scarcest commodity in Colorado, no water should be used for fracking.
Oil and gas production is much less important.
3. Any state, county or municipal landscaping should follow the xeroscape plan to avoid excess water usage. The general public should be encouraged to follow the same plan.
Green grass is no longer fashionable and landscaping such as that required in California should be instituted.
4. Any new projects the state invests in should be carefully screened to ensure that they
benefit our communities, rivers and agriculture. Specifically, any planned municipal
expansion of front range development should be severely evaluated, insisting on proper
environmental controls.

Thank you for reading the above comments.

Sincerely,
Dr. Robert Green

Miss Asiah Jiron
190 Washington Ave Apt 9
Golden, CO 80403-1300

Aug 28, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

We cannot be thinking about the present we need to start thinking about the future and our future generations resources. We need to protect what is rightfully ours once Colorado's water comes back to the States and we need to conserve and protect what we have. Please consider what we suggest needs to be done and thanks so much for your time and consideration.

Sincerely,
Miss Asiah Jiron

Mr. Gary Weaver
11986 Bear Creek Dr
Franktown, CO 80116-9308
(303) 841-1607

Aug 28, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Water is much more precious than development, oil and gas.Lets get specific on conservation goals and their implementation. Good stream management....especially for fishing. No more dams. Keep a close eye on this Sterling Ranch Development in Douglas county. Their water plan is shady and dicey. Something stinks in its planning. It is a progressive development (developed in stages) It MUST HAVE THE WATER BEFORE IT CONTINUES.....Watch it.

Sincerely,
Mr. Gary Weaver

Ms. Chloe Everhart
3465 Adams Rd
Sanford, CO 81151
(719) 452-0952

Aug 28, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

I'd really like to see funding for stream and river restoration in the water plan. I'd also like to see sufficient specific language about urban conversation measures.

Finally, I'd lIke rural homesteads to be allowed to do small scale rainwater collection.

Sincerely,
Ms. Chloe Everhart

Ms. Dorothy Wiseman
8165 W 71st Ave
Arvada, CO 80004-1832
(303) 940-1686

Aug 28, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Water in the West is critical and the water plan for Colorado needs to be specific and comprehensive,
The plan should increase funding for stream management and restoration. One million dollars is inadequate.
The screening criteria for new water projects needs clarification and each project must benefit our communities.
It would be helpful to propose very specific ways to encourage and/or mandate water conservation. For example, to have covenants requiring front lawns should be eliminated. Also the type of grass that is planted around residences should be drought tolerant.
Thank you for listening to my ideas.

Sincerely.
Dorothy Wiseman

Sincerely,
Ms. Dorothy Wiseman

Mr. Jan Peterson
4921 Sandstone Dr
Fort Collins, CO 80526-4561
(970) 223-2400

Aug 28, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

I have three major areas of concern:

(1) Substantial funding for stream management and restoration is needed. The amount allocated in the current plan is -quite simply- inadequate to productively manage tens of thousands of miles of Colorado's rivers. Please establish a long-term funding mechanism based on allocations of costs to all who use water --but especially weighted towards risky enterprises that may well cause contamination in the future-- that will endure and continue to provide for this long-term need. It is sad that those who have already caused our existing problems have been let off the hook! This liaise faire attitude cannot be allowed anymore!

(2) The plan sets a common-sense urban conservation goal of approximately 1% per year water use reduction. To achieve this important goal, infrastructure improvements, technological innovations and behavioral changes in Colorado will need to occur. These should include changes in the way water is used for agriculture (i.e. more efficient delivery methods, like drip irrigation, that do not significantly contribute to evaporative losses), an increasing rate structure for the amount of water each individual uses, promotion of aerospace landscaping (and prohibition of lawns that require huge amounts of water in the semi-arid region of the country), and real encouragement of water conservation in all categories of water-consumers (together with punishments for those who disregard the importance of conservation --especially those who claim that the rich should be privileged to buy as much as they want, while the poor suffer).

And (3), specific screening criteria for new water projects the state invests in are needed so that projects move forward only if they benefit our communities, rivers and agriculture. We need solutions that do not pit one consumer against another. We need solutions that recognize the reality of global warming and the associated increases in evocative losses from exposed surface waters. One solution is to recharge underground aquifers for use storing clean water. But this also requires that we protect our underground aquifers from contamination by fracking and other intrusions that can threaten our potable water supplies.

Sincerely,
Mr. Jan Peterson

Ms. Barbara Siems
PO Box 436
Bailey, CO 80421-0436
(303) 838-6973

Aug 28, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

I admit I may not be totally updated on Colorado's Water regulations, but as an MS in geology I worked with groundwater development in the Castle Rock area around 35 years ago. At that time I was told that aquifer development was only required to be limited so that the aquifer would last 100 years. If that was indeed the case, then 35% of those aquifers would have been mined by now. Even then that seemed very short-sighted.

Actions which can minimize our mining of irreplaceable water resources while increasing the health of renewable resources are vital. It is imperative that stream restoration and management be funded adequately while wasteful use in population centers is minimized. Education in water conservation is badly needed and predictions for future climate change impacts in Colorado need to be made &, again, publicized. The public needs facts about the importance & vulnerability of the resources.

My final comment may seem minor, but I recently I had a conversation with a young employee of the USFS about apparent beaver population declines in the Fourmile Creek area of Park County. Beavers are important in slowing runoff & supporting mountain ecosystem diversity. I was told that trappers have a possession limit but can sell what they trap & then repeatedly go trap more - making their trapping essentially unlimited & wiping out the populations in whole watersheds. In this, water conservators need to cooperate with wildlife people and funding for preservation of beaver populations as important elements within our riparian ecosystems is important.

Thank you for any efforts you make toward trying to look at the water resources as both contributing to & being enhanced by healthy ecosystems.

Sincerely,
Ms. Barbara Siems

Mrs. Jeanette Zawacki
1020 Berea Dr
Boulder, CO 80305-6535
(847) 902-7314

Aug 29, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

I believe fracking is contaminating our water supply and needs to be regulated or even outlawed. We need to know what chemicals are being pumped into the ground to extract this energy. i would like to see a bigger push for renewable energy, mainly solar. rather than contaminating the water supply.

Sincerely,
Mrs. Jeanette Zawacki

Ms. Kathleen Herrera
PO Box 140924
Denver, CO 80214-0924
(720) 329-1446

Aug 29, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

We need to address this and something needs to be done about our water for now and the future.

Sincerely,
Ms. Kathleen Herrera

Ms. Jahnavi Stenflo
2831 20th St
Boulder, CO 80304-2703
(720) 304-3172

Aug 31, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Dear Governor Hickenlooper and Colorado Water Board Members,

Clean water and air are human rights. We have not been doing the best we can to ensure the rights of our State!

The second draft of the Colorado Water Plan, released in July, is flowing in the right direction. From setting a conservation goal to reducing water use in our cities and towns, to acknowledging that certain protections are needed to keep our rivers healthy, the second draft shows promise.

I understand that you have been reviewing and incorporating the public's comments and concerns over the past few months. Here are my suggestions as to what remains to be done:

The plan's urban conservation goals lack implementation specifics.

Substantial funding for stream management and restoration is needed.

We need specific screening criteria for new water projects so that projects move forward only if they benefit our communities, rivers and agriculture. If they only line the pockets of already rich businesses and their cronies, this is NOT conservation.

Please do the correct and proper thing for the great state of Colorado, which I am a 4th generation native of, from Pioneer family! Conserve our water for future generations!

Thank you!

Sincerely,
Ms. Jahnavi Stenflo

Mrs. Amy F.
2984 S Akron St
Denver, CO 80231-4630
(720) 956-5447

Aug 31, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Please protect Colorado's water!

Sincerely,
Mrs. Amy F.

Ms. Sarah Mowder
2960 W Stuart St Apt B204
Fort Collins, CO 80526-6630

Aug 31, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Governer Hickenlooper and Water Board Members,

I am writing you as a person passionate about working as a School Social Worker in the Poudre School District and the Colorado outdoors. It is vital for us to protect what defines Colorado, our beautiful scenic spaces and the health of our citizens. Living in Fort Collins, I am familiar with steady population growth and we need to make a thoughtful plan on how to best utilize our resources. We live in one of the best places in the world and word's out, people are moving to our majestic state!

I feel that the second draft of the Colorado Water plan is a well thought out plan, and I appreciate your work on it. I have a few thoughts on ways that we could improve this plan. I believe that we need to devote significant funding to keeping our rivers healthy. Healthy rivers attract tourism, recreation, support wildlife, and improve overall quality of life. I believe we need to focus more on local conservation and efficiency and rely less on trans-mountain diversions for bringing water from the western slope. As a citizen of the ever growing front range, I assure you that we are ready for the change and open to learning and shifting the way in which we use water in order to protect the environment. I believe that a lack of knowledge, not a lack of desire results in inefficient water usage in the front range. The plan should entail a statewide municipal water conservation goal of 10% by 2020. This should include public education, conservation incentives, increasing indoor and outdoor water efficiency, and developing and supporting water recycling programs. Colorado has been a trail blazer in so many movements and we need to be a front runner in modernizing agricultural water use and water sharing agreements.

Thank you for your time,
Sarah Mowder

Sincerely,
Ms. Sarah Mowder

Miss Angelica Martinez
620 Grandview Mdws Dr Unit D107
Longmont, CO 80503-8935

Sep 1, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

As a recent resident from Oregon I understand the importance of water and what lack of water can do, especially for our California friends in the South. While that lack of water was from natural causes, it would be irresponsible to move forward without carefully and deliberately considering the affects a Water Plan would make to future generations and the future of this great state. Water is in need/demand in many places, it is a very important utility that should be protected. I write this a few specific goals. I believe water conservation should be adequately funded with implementation specifics for urban conservation included. I also believe that new water projects should be screened to insure that they would benefit the community and nearby rivers and environments. I just ask you to deeply consider the affects for future residents, as I am sure that you are. Thank you for your time.

Sincerely,
Miss Angelica Martinez

Ms. Maureen McCarthy
1 Dontgiveitout
Fort Collins, CO 80525-2022

Sep 1, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Talk is cheap, and meetings that just lead to more talk are annoying and a waste of time! Do I have your attention now? Please DO the right thing, and the time to do that is NOW!

Allocate resources to protect our rivers! Set a statewide municipal water conservation goal of at least 10% by 2020! Update agricultural water use and water-sharing agreements! Stop doing the same thing and expecting different results through more large diversions! Act now and our children will thank you!

Sincerely,
Ms. Maureen McCarthy

Mr. Paul Mciver
156 Ski Road East
Allenspark, CO 80510

Sep 3, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

This state cannot support 10 million people. Climate change will make water so scarce that people will be hard pressed to survive. Let's not be foolish and delude our selves into believing that conservation will make work.

Sincerely,
Mr. Paul Mciver

Ms. Madelaine DeVan
3304 Zephyr Ct
Wheat Ridge, CO 80033-5968
(720) 219-2033

Sep 4, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Water planning right now is so important for the sustenance of our beautiful state. Many people continue to move here and if water resources are not carefully allocated things could get very bad in the near future. Balancing the need for local agriculture and incentives for both farmers and urban dwellers to conserve is incredibly important. These decisions are crucial. People will look back to these times to see if smart forward thinking decisions made that kept our state beautiful and provides adequate resources to all.

Sincerely,
Ms. Madelaine DeVan

Ms. Sara Gallagher
238 Pilot Knob Ave
Manitou Springs, CO 80829-1642

Sep 4, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Please consider these ideas.

Colorado's water should first and foremost go to those who live here and need to drink water and bathe. Colorado residents' needs should be accounted for before water is sold to other states. Yes, I know that "water law" is already in place that allows that. The antiquated water law should be repealed.

Second, water bottling plants should be banned in Colorado. All water use by Nestle' and others to bottle water should be halted immediately.

Third, use of water in fracking removes water from the water cycle forever. This should also be halted immediately.

Finally, industry is the largest user of water. They should be the first and largest conservationists. My low-flow toilet can only effect so much change.

Sincerely,
Ms. Sara Gallagher

Ms. Kathy Ligas
215 S 12th St
Colorado Springs, CO 80904-4319
(719) 634-1492

Sep 4, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Please support a strong plan to ensure that future residents of Colorado have a secure water source.

Sincerely,
Ms. Kathy Ligas

Mrs. Susan Black
621 Wind River Ct
Windsor, CO 80550-3180
(631) 697-7966

Sep 4, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

I support the Sierra Club recommendations:

:(1) Substantial funding for stream management and restoration is needed. Only $1 million has been allocated for stream management plans. That amount is simply inadequate to productively manage tens of thousands of miles of Colorado's rivers.

(2) The plan sets a common-sense urban conservation goal of approximately 1% per year water use reduction. To achieve this important goal, infrastructure improvements, technological innovations and behavioral changes in Colorado will need to occur. Help the state identify specific measures to encourage more efficient urban use of our limited water resource.

And (3), specific screening criteria for new water projects the state invests in are needed so that projects move forward only if they benefit our communities, rivers and agriculture.

Sincerely,
Mrs. Susan Black

Ms. Barbara Hill
2935 El Torro Rd
Grand Junction, CO 81503-2925
(970) 255-9900

Sep 4, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Please be sure the Colorado Water Plan is fine-tuned to offer specific ways that cities and towns, and individuals can conserve water by educating them on those methods. More funding for stream management and restoration is needed, beyond the amount mentioned in the draft water plan. I would not support any plans to divert water from the western slope to the front range. I do support educating the public on the benefits of water-conserving landscaping. I also think a lot of thought should be given to building more golf courses in areas that already have adequate golf courses, because of the water requirements of golf courses. I also think more attention should be given to ways to recycle water in cities and towns. .

Sincerely,
Ms. Barbara Hill

Ms. Laura Waterworth
12556 E Tennessee Cir
Aurora, CO 80012-3458
(303) 361-6799

Sep 5, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Please protect Colorado's water and wilderness areas for wildlife and for us to enjoy. Ensure that water is available today, tomorrow and beyond. Protect Colorado Water. Thank you.

Sincerely,
Ms. Laura Waterworth

Mrs. Brenda Sanders
610 S Clinton St
Denver, CO 80247-1574

Sep 7, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

What are the specific requirements needed for your "Colorado Water Plan?"

Sincerely,
Mrs. Brenda Sanders

Dr. Donald F DeGroot
2200 Iris St
Lakewood, CO 80215-1665
(303) 233-1945

Sep 7, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Without water, we are dead.

Sincerely,
Dr. Donald F DeGroot

Ms. Linda Chase
1640 Bellaire St
Denver, CO 80220-1047
(303) 377-4931

Sep 7, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Water is the most valuable and precious resource we have. With a growing population protecting water for future use and management needs to be every state's priority.

Sincerely,
Ms. Linda Chase

Mrs. carly lober
PO Box 1433
Estes Park, CO 80517-1433
(209) 617-8746

Sep 7, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

There should be no more trans-mountain diversions, and water storage projects ! We need to live within our means ! There is only so much water in the rivers, and if Colorado builds more water storage projects, and TMD, people will NOT be forced to conserve and reuse water - and more water will fuel more growth !

There should be more conservation efforts - stop watering exotic blue grass lawns, have native lawns, reuse effluent water for agriculture and drinking water.

We need to protect our rivers for wildlife, recreation, municipal and agriculture - NO MORE TAKING MORE WATER OUT OF OUR DEPLETED RIVERS !

thank you,
Carly Lober
Estes Park CO
80517

Sincerely,
Mrs. carly lober

Mr. Michael Begley
1194 English Sparrow Trl
Highlands Ranch, CO 80129-6225

Sep 7, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Colorado Water Board,
While I support the direction the July draft of the Colorado Water Plan is taking, there are areas of improvement that would help secure our state's water future. For one, an increase in funding for restoration of Colorado's streams is sorely needed. Also, the goals for urban conservation need to provide specific guidelines, and perhaps incentives, to assure that they will be met. Please further strengthen the plan to assure we have a sustainable supply of water for all Coloradans for decades to come.

Sincerely,
Mr. Michael Begley

Dr. Jeanie Dedmon
929 S Zuni St
Denver, CO 80223-2538
(303) 349-4827

Sep 7, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Let's keep Colorado water in Colorado. It's your duty to protect the citizens of Colorado against Agribusiness and robbing our state of our irreplaceable natural resources. Come on John!!! Do your damn job!
Sincerely,
Dr. Jeanie Frank Dedmon 3033494827

Sincerely,
Dr. Jeanie Dedmon

Mrs. Jen and James Genasci
3091 Mill Vista Rd
Highlands Ranch, CO 80129-2413

Sep 7, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Dear Governor Hickenlooper and Members of the Colorado Water Board:
My spouse, James, and I want to urge all of you to take the necessary actions, to ensure that:
more funding is appropriated in order to restore streams in Colorado, and properly manage them.

In addition, several new water projects are needed, but we must make sure that the projects actually benefit communities, and the rivers.

Thank you for your consideration of our comments.

Sincerely,
Mrs. Jen and James Genasci

Mrs. Sandra McLuckie
Tradition Drive
Fort Collins, CO 80526
(970) 207-9653

Sep 7, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Our rivers must be allowed their natural flow. When rivers run dry or low, not only water is lost but so is the ecosystem. Also believe in conservation but all the possible measures to conserve can not match the clean water that is ruined with fracking. Not only is the water that is used polluted but the polluted water is then pumped down into the ground where the likely hood is that it will destroy the surrounding ecosystem and drain into other aquifers. I know the information that is presented says that the polluted water is put in below the aquifers but look at California. Their land is sinking as much as two inches a month in some areas where the aquifers have been exhausted, California is now trying to located deeper aquifers.

Sincerely,
Mrs. Sandra McLuckie

Mrs. america sherwood
7139 S Elm Ct
Centennial, CO 80122-2425

Sep 8, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Dear Governor Hickenlooper,

Please make sure that the Colorado Water Plan keeps our rivers healthy. Please prevent unnecessary and hazardous drilling close to the rivers to prevent leaks from fracking chemicals and other chemical waste containments close to our drinking and fishing waters. Leaks have occurred and will keep on occurring if we do the wrong thing.

Expand conservation incentives and funding to modernize the irrigation infrastructure.

Support water sharing agreements.

Propose standards without sacrificing important protections for our rivers. Projects that meet standards should receive state support.

Sincerely,

America Sherwood
7139 S. Elm Ct.
Centennial, CO 80122

Sincerely,
Mrs. america sherwood

Ms. Dawn Hendry
12 Mountain High Ct
Littleton, CO 80127-2635
(303) 978-1999

Sep 8, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

The Colorado State Water Plan's urban conservation goals lack implementation specifics.

Also, substantial funding for stream management and restoration is needed.

Lastly, specific screening criteria for new water projects are needed so that projects move forward only if they benefit our communities, rivers and agriculture. Thank you.

Sincerely,
Ms. Dawn Hendry

Ms. Patirica Mesec
5200 W Ottawa Ave
Littleton, CO 80128-6845

Sep 8, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Water is so precious here in Colorado. Although we live in Jefferson County, we spend a great deal of time in Grand County, specifically in the Fraser Valley. We have watched as the Fraser River became more and more threatened because of the diversions of the water by the Denver Water Board. It would seem that the river is making some progress coming back from the brink of extinction because of the new compromise agreement. But the situation of the Fraser and so many of the rivers in Colorado remains dire. The beaver are mending their dams. Who knew how valuable the beaver really are? Who knew people could be so bad for the rivers?

Anyway, I ask that you work to improve water conservation here in our state and that you do what you can to increase funding for stream management and restoration.

Sincerely,
Ms. Patirica Mesec

Mr. James Berchert
31715 US Highway 24 N
Buena Vista, CO 81211-9872
(719) 395-2061

Sep 9, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Dear Governor Hickenlooper,

Thank you for reaching out for opinions on this very important issue,

I would like to ask the following:
1) We need to make "water awareness" an issue for front range users. We need specifics on how this will be implemented.
2) We need to increase funding for stream management and restoration
3) Agriculture and our wildlife are a Colorado heritage that needs to be protected, As the population in Colorado grows, we need to move forward with any new water project with this in mind.
4) We are on an irrigation ditch, which provides water to ranchers and a goat dairy. With what is going on in California, we need to support our ranchers and farming. That is why it is vital that Front Range users understand the impact.

Thank you

Kind regards,
Jim and Laura Berchert

Sincerely,
Mr. James Berchert

Mr. Luke Simons
3150 S Tamarac Dr
Denver, CO 80231-4347
(720) 474-3833

Sep 13, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Don't frack South Park. Please get us on a clean path ASAP. The feedback loops are only making climate and environmental devastation much worse and quickening our demise.

Sincerely,
Mr. Luke Simons

Mr. Eric Hintsa
3015 10th St
Boulder, CO 80304-2521
(303) 440-0645

Sep 15, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Even after a couple of wet years here, we all know that water is crucial to Colorado - both for quality of life and the economy. It is relatively scarce too. For the next Colorado Water Plan, conservation measures for cities (and for agriculture) are essential. Please make sure that these are stressed in the final version of the plan, with all the specific details necessary for planning and implementation. Funding for water conservation is needed, and for all stream management and restoration projects.
Finally, I think any additional projects that take water from the Colorado basin and divert it to the eastern slope should looked at very skeptically. The Colorado basin is short of water now, this is only going to get worse with a warming climate in the future, and removing any more water from the the Colorado and its tributaries is a bad idea. Conservation, re-use, etc. can solve most of the pressing issues on the eastern slope, but at some point there will be hard limits to what people can do on the western Great Plains and the eastern slope foothills.
Thank you for considering my views.

Sincerely,
Mr. Eric Hintsa

Ms. Kay Hannah
11589 Crawford Rd
Paonia, CO 81428-6500

Sep 15, 2015

John Hickenlooper and Water Board Members
CO

Subject: Colorado Water Plan

Dear John Hickenlooper and Water Board Members,

Dear Governor Hickenlooper and Water Board Members,

As a resident of Western Colorado I am very concerned that any water plan that is adopted reflects the recognition that demand is outstripping the finite supply of water in our state. I support strong urban water conservation goals including specific ways those goals will be met. Perhaps a moratorium on golf course development could be part of it.
Funding is key to the implementation of any plan and I encourage you to ensure that adequate funding is made available for needed stream restoration, protection and management. Also, any new water projects need to meet specific criteria to ensure that they will benefit the rivers, agriculture and the communities that depend on the water being discussed. I am strongly in favor of minimal or no diversion of western slope waters to the eastern developments and rather favor restricting development to not overstrain our precious water supply.
Thank you for considering my concerns.

Sincerely,
Ms. Kay Hannah

PUBLIC INPUT ITEM 152

Steve Hogan
Mayor
15151 E. Alameda Parkway, 5th Floor
Aurora, Colorado 80012
phone 303-739-7015
fax 303-739-7594
email shogan@auroragov.org

September 16, 2015

The Honorable John Hickenlooper
Governor, State of Colorado
136 State Capitol Building
Denver, CO 80203

Dear Governor Hickenlooper,

As you may know, Aurora Water is the third largest water utility in the State of Colorado, serving a population of more than 348,000. In addition to our mission to enhance and protect the present and future quality of life for Aurora citizens by providing safe, dependable and sustainable water, sewer, and storm water services, we strongly support the overarching water values you have identified in Colorado's Water Plan (the Plan). To that end, Aurora has participated in a number of efforts to provide technical and qualitative information to support and enhance the Plan.

Aurora is one of 41 members of the Metro Mayors Caucus (MMC), a voluntary association of mayors in the Denver metro region, committed to developing and implementing collaborative solutions that make the region a better place to live and work. MMC recently submitted comments on the July 2, 2015 draft of Colorado's Water Plan. Aurora supports those comments and would like to emphasize MMC's sentiments regarding the combative language added to the July draft of the Plan's introduction. The introduction, in its current state, sets the wrong tone for the Plan. A statement implying that the efforts that cities and water suppliers have used to plan for water supply projects is based on "blind hope" instead of careful analysis is misleading and unacceptable. Aurora also urges the Colorado Water Conservation Board (CWCB) to modify or remove the bullet in the introduction that infers cities across the Front Range are "striving to recreate the water-intensive landscapes of the Eastern U.S. instead of adopting a Western water ethic." This statement implies that it is wrong or "unacceptable" for the residents of the urban areas to value the area's urban environment. The Plan itself recognizes "the vital importance of urban landscape and its benefits, including improved air quality, surface water quality and groundwater quality, increased property values, aesthetics, and general quality of life" (page 82), and that "healthy urban landscapes enhance the livability of a city or town and are a crucial asset for urban populations" (page 86), but doesn't reconcile that information with the introductory statement that this urban landscape is "unacceptable to most [Coloradoans]." Aurora takes conservation very seriously and the City's conservation efforts have yielded extraordinary results. From 1997 to 2014, Aurora's population has increased by 68,000 (25%), while the gallons per person per day (gpcd) deliveries have decreased by 56 gpcd (32%), resulting in a 21,000 acre-feet per year (32%) savings in 2014 compared to pre-conservation levels! We have dramatically reduced our water usage while maintaining a high quality of life for our residents. Leaving the aforementioned bullet points as is would degrade those efforts and the great strides many Colorado citizens have taken towards water efficiency.

Aurora would like to stress the importance of Identified Projects and Processes (IPP) success. This was not outlined in detail within MMC's comments; however, Aurora believes the completion of IPPs is crucial to meeting the State's projected supply gap, and in fact, a success rate of 80 percent of all IPPs is recognized in the Plan and by the Interbasin Compact Committee (IBCC) as critical to the success of the Plan. These projects are important to every basin in the State. All efforts to meet the gap must be pursued simultaneously to secure our State's water future. IPPs will be the backbone of those efforts, providing real mechanisms to better utilize reuse water, enhance the environment, capture and store conservation savings, create opportunities for better recreational experiences, and reduce the loss of agriculture across the State.

With regard to the MMC comment that "As new water conservation strategies are introduced, these practices must become permanent, and not simply viewed as short term crisis response," we further need to point out that drought response strategies such as increasing watering restrictions and implement drought surcharges are an important tool to react to conditions that are more severe than originally anticipated. Most basin roundtables have agreed that some portion of conservation savings should be reserved for short term responses.

Finally, regarding the MMC comment that defining per capita water use targets to reduce the gap should be achieved by a date certain, our position is that all actions defined in the Plan should move forward together and not sequentially to take advantage of opportunities as they are available. Just as new water projects take years to plan and implement, conservation savings are also achieved gradually over time and setting date certain deadlines is unrealistic.

We applaud you and the CWCB staff on your continued commitment to advancing efficient statewide water use and planning. Thank you for recognizing Aurora's comments and considering potential revisions to the Plan. It is our sincere hope that the City of Aurora's efforts and contributions will add value to Colorado's Water Plan and the advancement of Colorado as a whole.

Sincerely,

Steve Hogan
Mayor, City of Aurora

cc: John Stulp, Special Policy Advisor to the Governor for Water
James Eklund, Director, Colorado Water Conservation Board

PUBLIC INPUT ITEM 153

Comments on the Second Draft of the Colorado State Water Plan

Gene R. Reetz, September 17, 2015

Dear Governor Hickenlooper and Members of the Colorado Water Conservation Board:

There are few issues as complex and critical as water and therefore you are all to be commended for your respective efforts to develop a Colorado State Water Plan. As you well know, water touches every aspect of our lives, from being THE critical ingredient for life itself, to being a crucial component of our economy, to being essential to our "quality of life." A State Water Plan should address all these aspects of water.

NON-CONSUMPTIVE WATER NEEDS

While the second draft does acknowledge the importance of non-consumptive (environmental and recreational) water "needs", the emphasis remains on traditional (municipal, industrial, and agricultural) "consumptive" water "needs". However, according to the South Platte Basin Plan, individuals were asked to identify the "most important water needs" and 46% of the respondents identified "environmental" and "recreational" water needs as "most important".

It is critical that the "non-consumptive" water needs be QUANTIFIED as have the more traditional "consumptive" needs. This should be done BEFORE additional water is developed for "consumptive" needs.

Clearly healthy rivers, riparian areas, and watersheds are vital to Colorado (in terms of water supply as well as quality of life) and therefore the associated water needs should be addressed in the State Water Plan. Unfortunately, many of these "systems" have been degraded (streams severely de-watered and/or polluted, riparian areas destroyed, and watersheds degraded) and therefore the Water Plan should go beyond maintenance of the "status quo" and promote "restoration" of streams, riparian areas, and watersheds.

WATER QUALITY

Traditionally water quantity and water quality have largely been separated and managed by separate agencies with separate laws and regulations. However, since both deal with the same resource (water), better integration and coordination of these separate programs is essential to protection, management, and development of Colorado's water and therefore should be addressed in the State Water Plan.

The r The recent Gold King Mine spill received much attention, but the legacy of pollution from
from mines in Colorado has long been recognized. Similarly, the water quality
degradation from "non-point" sources (primarily agriculture, but other sources as well) is
also well documented. The State Water Plan should strengthen the discussion of the critical importance of water quality programs for the maintenance and restoration of Colorado's water resources.

CONSERVATION AND EFFICIENCY

It is essential that the State Water Plan acknowledge that our water resources are finite, and in fact probably declining because of climate change. Therefore water conservation and efficiency MUST be the foundation of the State Water Plan. United States Geological Survey studies have documented an over-all decrease in water use despite population growth in the US.

The inclusion of the "stretch" goal of 400,000 acre-feet for municipal conservation is a step in the right direction. This should be attainable as a number of cities in the West have had significant population growth without increased water demands.

Since agriculture is by far the largest user (diversions and consumptive uses) of water in Colorado, the opportunities for increasing water conservation and efficiency in agriculture should receive greater attention in the State Water Plan. Clearly there are significant differences in the impacts of agricultural water use and municipal water use and these should be acknowledged, but this should not be an excuse to ignore the major user of Colorado water.

TRANSMOUNTAIN DIVERSIONS

Even though there is widespread agreement that the Colorado River is over-allocated, there remains interest in additional transmountain diversions. Headwaters rivers are already at, or even beyond, their critical ecologic condition and the potential for a "call on the river" could jeopardize existing diversions. Any additional transmountain diversions would only exacerbate these problems.

The State Water Plan should not promote additional TMD's but instead focus on meeting water needs within basins through realistic, attainable means (increasing conservation/efficiency, various arrangements between agricultural and municipal water users, etc.)

MISCELLANEOUS COMMENTS

The State Water Plan should evaluate all potential water supply projects on a commonly accepted basis of “firm” or “safe” yield, in other words what a project can reliably provide. Without a common “yield”, it is impossible to compare potential projects or determine how much water they can actually provide on a sustained basis.

While the second draft discusses the link between water supply planning and land-use planning, the final State Plan should strengthen efforts to better coordinate these activities. Clearly land-use planning is primarily a local responsibility and the State plays a limited role. However, various State programs (including those under the CWCB) can influence land use decisions.

The draft plan expresses concern about the review/permitting process for water projects. The reality is that the length of these processes is largely a reflection of both the impacts and the complexity of the proposed projects. While the desire for more expedient decisions is understandable and a worthy goal, it must not come at the expense of a complete understanding of a project (often not available until a draft Environmental Impact Statement) or of public involvement and review.

Given the many uncertainties (population change, societal values, climate change, economic development, etc.) it is important to update the State Water Plan on a regular basin and 5 years seems like an appropriate time period.

SUMMARY AND CONCLUSIONS

With increasing population, competing demands, and limited (if not reduced) supplies Colorado faces severe water challenges in the future. If the State Water Plan is to truly address these challenges the plan must acknowledge that our water supplies are finite and therefore improving water conservation and efficiency must be the foundation of the State Water Plan and that this applies to all water-use sectors.

The plan should also recognize, and specifically plan for and finance, water to maintain and restore “non-consumptive” needs as these are a priority for Colorado citizens. The health of our rivers, riparian areas, and watersheds is essential to our future.

Thank you for the opportunity to comment on the second draft of the State Water Plan.

Gene R. Reetz, Ph.D.
470 Clayton Street
Denver, CO 80206

PUBLIC INPUT ITEM 155

WESTERN RESOURCE ADVOCATES

September 17, 2015

James Eklund, Director
Colorado Water Conservation Board
1313 Sherman Street
Denver, CO 80203

Re: Comments on the Second draft of Colorado's Water Plan - YayRivers

Dear CWCB board and staff:

A group of 100 river rats, creek side loungers, fearless floaters, playful pups, and tiny tots wanted to SHOW you why they support conservation efforts to protect their perfect days spent on full and flowing rivers, and we at Western Resource Advocates wanted to share these photos with you as official comments on the 2nd Draft of Colorado's Water Plan. These are in addition to other, more technical comments submitted by Western Resource Advocates and several of our conservation partners.

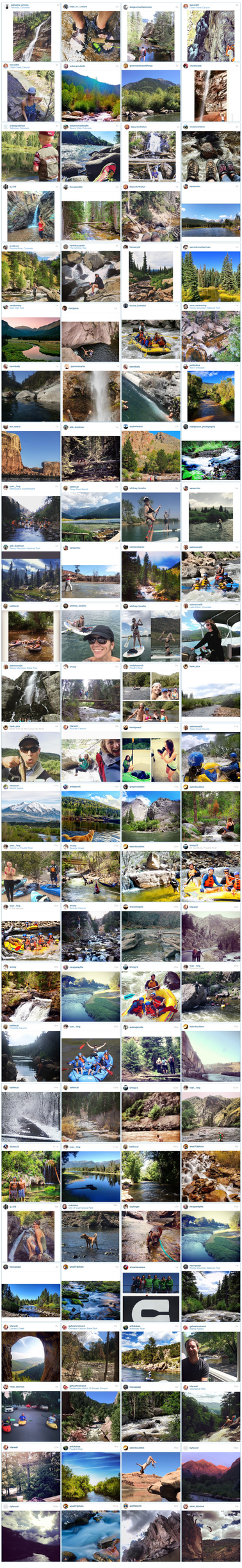
At WRA, we invited the public via Instagram to post photos of themselves playing on Colorado's rivers and streams and to tag them as #YayRivers to indicate their support for prioritizing the health of flowing rivers in Colorado's Water Plan.

We want to express our appreciation to the CWCB for including the public in shaping Colorado's Water Plan, and being open to the public communicating through a variety of channels and formats that work best for them. We're looking forward to sharing news about the final Colorado Water Plan through our various social media channels upon its release.

Sincerely,

Maren McLaughlin-Klotz
Communications Manager
2260 Baseline Rd, Suite 200
Boulder, CO 80302

#YAYRIVERS



PUBLIC INPUT ITEM 156

City of Greeley Colorado

September 17, 2015

James Eklund, Director
Colorado Water Conservation Board
1313 Sherman Street, Room 721
Denver, CO 80203
cowaterplan@state.co.us

Re: Comments, Draft Two, Colorado's Water Plan

Dear Director Eklund:

The City of Greeley has reviewed the second draft of Colorado's Water Plan. We commend the IBCC and CWCB staff for their very hard work on this major project. We have both general and specific comments, which we hope will be seriously considered in compiling the draft that will be sent in December to Governor Hickenlooper.

This second draft appears to be a restructuring of Colorado's system of water administration, with the State in a new and central role. We are concerned that additional mandates, structures and requirements will be more expensive, more bureaucratic and more time-consuming.

CWCB calculates that municipalities consume 7% of the state's available water (pie chart, p. 78). While, as the Governor has said, "every conversation about water begins with conservation," those conversations cannot end there. Conservation is just one leg of the stool but in this draft of the water plan, it gets most of the attention. We believe that the other legs should be given equal weight.

In particular, storage is mentioned very little, yet without storage, conservation cannot work. We cannot conserve our way out of the anticipated gap, and the conservation mandates proposed in this draft could have a domino effect on our environment, our economy, our public health and our quality of life.

Our comments are limited to only those subjects and chapters that cause the greatest concern. Our specific comments are as follows:

GENERAL COMMENTS

P. 2 - Water laws and administration are referred to as "out of touch with our changing needs", and water law is referred to as "dogmatic." We disagree with this statement and believe it is inconsistent with the Governor's executive order.

Suggested modification: "The Colorado Doctrine has worked well for 150 years to protect the property rights of water rights owners. Incremental adjustments have worked well to accommodate changing needs. With minor changes of specific statutes to meet new challenges, we are confident the Colorado Doctrine will continue to be effective in meeting our citizens' needs in the future."

The Governor's Executive Order further stated that the plan is intended to "streamline the state role in the approval and regulatory processes regarding water projects." However, later chapters detail a new regime of requirements, approvals and mandates over and above those currently required by the federal government. We believe that the state's role is currently effective and see no reason to change it without risking duplication of authorities.

P. 25 - CWCB's role in the development of state water policy should not evolve into more agency regulation. We are concerned that in an effort to streamline, we make this process more confusing and more burdensome.

CHAPTER 4

P. 66 contains a chart of all of the projected effects that climate change could have on Colorado's water supply. All are based on reduced precipitation. No provision is made for wet years, and the Plan does not acknowledge the benefits of storage in drought mitigation or compact compliance. We suggest that we use this opportunity to correct this omission for this document to be complete.

P. 67 reads, "Colorado is accustomed to dealing with variability and drought over the last 150 years, yet tree ring-reconstructed stream flows indicated that the state has endured longer-lasting and more severe droughts than we have seen on our relatively brief observed record. In fact, the 20th century is unique in that there were TWO PROLONGED WET PERIODS AND NO MULTI-DECADAL DROUGHTS (emphasis added). Figure 4-8 shows multiple droughts (shaded highlights) that exceed the intensity and duration of our observed record."

This validates the need to accommodate and prepare for wet years as well as dry years, yet this Plan does not do that. This would be an excellent place to elaborate on the need for and benefits of more storage.

Pgs. 71-74 are the primary pages devoted to the subject of storage, which is then referred to occasionally in other places in the Plan. P. 72 acknowledges that "new storage projects may be contentious and face numerous hurdles, including permitting and funding."

The Plan should advocate for water storage projects, and propose methods to help reduce regulatory timelines.

The last paragraph of Page 72 proposes a rationale for not building new storage projects and instead suggests only reallocating or enlarging existing projects. There are many newer, important storage options that need to be pursued. The South Platte basin has seen rapid growth in gravel pit storage along with expansion of ASR capabilities and the pursuit of new off rivers storage sites. That language needs to be revised to clearly indicate how important it is to develop "all" types of storage, including the storage components of IPPs, new storage projects, and rehabilitating existing projects, if we are going to make any real progress in solving both the existing and future "gap."

We believe the Role of Storage section on page 71 through 75 should include a discussion of the following (taken from the IBCC discussion on page 231):

> "The IBCC defined storage and other infrastructure as a critical cross-cutting topic. Storage can help water users maximize supplies by re-timing water availability. This allows users to capitalize on average and wet years and may increase the possibility of sharing water resources when possible. Storage and infrastructure are also important for minimizing agricultural losses, maximizing the use of conservation and reuse savings, and allowing for additional new supplies. In addition, storage can play a critical role in supporting the environment, particularly in support of endangered and threatened species recovery programs. Moreover, storage is an important element in protecting Colorado's interstate water rights pursuant to its compacts and equitable apportionment decrees. As Colorado plans for its water future and looks ahead to a projected 2050 supply gap, new storage and infrastructure will be needed to share, transfer, store, and convey water for the benefit of all. Additionally, new opportunities for existing storage and infrastructure should be explored to provide maximum utilization for all purposes and ensure compact compliance."

Given the critical importance of additional storage to meeting the future water supply gap, we suggest adding a new Chapter 6 focusing entirely on Storage (references to storage in South Platte BIP sections 1.9.4, 3.1.7, 3.2.1.7, and 5.5.8 could be used as a source). The format for chapter discussion should include discussions regarding:

- Flood Control
- Compact Compliance
- Drought Mitigation
- Crop Protection
- Minimizing Buy and Dry
- Ecosystem Health
- Environmental and Recreational Enhancements

If inadequate time remains to fully discuss each item, then this IBCC discussion should be included in the Role of Storage section verbatim in addition to page 231.

CHAPTER 5

P. 82 - "Additional focus on outdoor conservation is needed because indoor water use consumes approximately 5% of the water used, while outdoor water use consumes 70-85%."

This statement is accurate but gives an inaccurate impression. The sentence should read that municipal consumption is just 7% of total state water consumption and that outdoor consumption is less than half of that, so outdoor water use totals less than 3% of the state's consumed water.

The very real benefits of outdoor water use on property values and public health (air, surface and groundwater quality) need to be more fully acknowledged and considered in any related equation, and the impacts of further mandates need to be fully evaluated before they are adopted.

In this chapter, the "stretch goal" is referred to as "aspirational". In later chapters (see Chapter 10, in particular), that goal becomes the mandated requirement and is no longer aspirational. The stretch goal has not been studied, its impacts have not been evaluated, and it is unknown whether it can be reached. All references in the Plan to the stretch goal should be amended to refer to it as aspirational, or it should be deleted.

P. 86 touches on the effect of land use on water conservation. Higher densities may reduce outdoor demand. However, that statistic cannot translate to total demand reduction. Further, municipalities must also consider the impacts of higher densities on property values, roads and traffic, schools, social issues, public safety and public health that are directly affected. Water cannot be the only consideration.

CHAPTER 6

P. 99 - Five scenarios are proposed:

- Business As Usual,
- *Weak Economy*,
- Cooperative Growth,
- Adaptive Innovation and
- Hot Growth

Clearly, "cooperative growth" is assumed to be the ideal. However, we find its premise to be faulty.

This scenario assumes higher densities with mass transit as the ideal, which may be appropriate in a few population centers in the state but cannot apply broadly to the majority of the South Platte basin.

P. 103 maintains that, ""Green" values will likely favor more dense, low-impact urban development."
Higher densities also have impacts such as increased air pollution and higher temperatures in the urban core, neither of which are considered "green values." This sentence should be amended to read, "Green values and market forces may favor development patterns that may reduce outdoor water use."

P. 105 recommends adaptive management "action" items. The first says that "CWCB, in partnership with other state agencies, will commit state financial, technical, and REGULATORY [emphasis added] resources to the near-term implementation of prioritized water management projects."

We interpret this to mean that new regulations will be retrofitted onto the already-burdensome regulatory process in which current IPPs are now engaged. This would disrupt timelines and budgets, and will confuse an already complicated process. If that is not the intent, the language should be clarified. We suggest that "regulatory" be replaced with "professional" or in the alternative, that item should be deleted.

P. 158 - 6.3 Water Conservation and Reuse - Conservation is referred to as "inexpensive" but the impacts of the high conservation measures sought in this Plan have not been evaluated. Also, water infrastructure is expensive to build and maintain. Those costs do not go away and are not reduced through conservation; it is likely that as residents use less, they will pay more.

Providers have all begun conservation at different times. Those providers who have already reduced demand will find it more and more expensive to reach the proposed new standards. They have absorbed the costs of the less-expensive "low hanging fruit" options and should be credited with those gains, regardless of when they occurred. Many municipalities, especially on the Front Range, have been innovating in conservation for decades and should be credited with those gains.

P. 159 commends municipalities for reducing GPCD by an average of 20% statewide.

GPCD is an unreliable measure of demand, since the ways to measure it vary widely, and since it generally includes both residential and industrial uses, which are greatly affected by the needs of the industries served.

P. 164, Table 6.3.1-1 IBCC Potential Future Actions Summary

- "Establish a statewide conservation goal with intermittent benchmarks."

A statewide goal cannot be administered and apportioned fairly. The Plan has already observed that some municipalities have exceeded the 20% demand reduction average. Conservation successes should be credited to those who have them, and those who have not conserved should not be able to benefit from the success of others, in particular if state approval for water projects is contingent on demand reductions and conservation goals established by CWCB.

We suggest that this language be modified to read, "Develop a menu of best practices from which local governments may choose those that are appropriate to their communities and climates."

- "Develop and implement conservation standards."

This appears to suggest a new regime of regulations and mandates that may pre-empt local control. As previously stated, statewide standards cannot be fairly and evenly applied, given the wide variety of climate conditions throughout the state.

We suggest that this language be amended to read, "Develop a menu of best practices from which local governments may choose those that are appropriate to their communities and climates."

- "Promote enabling conditions for use of conserved water"

This subject should be approached with caution. The language should clarify that saved water can only benefit the stream between the original diversion point and the point of historic return flows.

- "Develop new incentives for conservation."

Incentives should not be confused with mandates. Some communities have already had to refuse state financial assistance because the cost of compliance was too great. This action item, through its definition of "incentives," risks a similar outcome in communities that most need the State's help. A clarification of the definition of "incentives" would be helpful to water providers.

- "Explore legislative concepts and develop support."

We believe it is premature to consider legislative concepts prior to the approval and adoption of a final version of this Plan. The phrase "when appropriate" should be added to this sentence, or this item should be deleted.

This page also explains the origin of the "stretch goal". SWSI studied and calculated the amount of conservation savings that could be achieved. Some IBCC members thought it would be good to "stretch" that number, but no analysis has been done to know its impacts or viability.

Nonetheless, the "stretch goal" is now stated as **"in the best interests of the state" and "will result from "new regulatory mandates... and changing customer behaviors."** This language is inconsistent with the revised language in the Conceptual Framework and should be deleted.

P. 165 Under "Implementation"
"Accountability" and "Monitoring" refer to "necessary requirements to achieve state endorsement of projects," and that "tracking demand reductions as part of future SWSI updates will be necessary."

Demand reductions in one region, or by one provider, cannot be fairly and accurately calculated and credited to meet a statewide goal. Despite years of debate, there is still no agreement regarding the date from which credit will be given for demand reductions, or how those demand reductions will be credited to a water provider. This language should be modified to study a possible formula that can be applied fairly throughout the state or in the alternative, it should be deleted.

P. 171 Actions (See also P. 400-401)

1. Adopt conservation incentives

This paragraph carries forward the old language in the Conceptual Framework. IBCC members noted that this requirement is prohibitive for small providers, and is a standard that should only apply to TMDs. It should be deleted, or should be amended to be consistent with the language in the Conceptual Framework.

5. Adopt a stretch goal.

The stretch goal was an idea. Then it was an aspirational goal. At this point in the Plan, it is an action item to be adopted by CWCB. This item is premature and should be deleted.

This paragraph also refers to establishing 'targets for local providers', "while giving appropriate credit for recent strides made in demand reduction." Those providers like Greeley, who have significantly reduced demand during periods of equally significant population growth, should not be held to the same standard as providers who have done little or nothing to reduce demand to this point. This Plan should define "appropriate credit" and "recent strides", or this language should be deleted.

P. 181 Land Use (See also P. 402)
This section opens with the statement that "integration does not mean the dilution of local control."

Local control is a constitutional protection afforded to home rule municipalities. The DRCOG goal of a 10% increase in density by 2035 is undefined. It does not state whether this is a statewide average, whether it considers increases already made by local governments, and whether it acknowledges that some neighborhoods in Denver Metro already have densities that equal or exceed such cities as San Francisco, Los Angeles, New York City, and London. It does not indicate how dense is too dense, or who makes that decision. Those are questions that are and should remain in the local control authority of local governments.

Also, water is not and must not be the only measure of appropriate land use. The environmental and social impacts of higher densities cannot be omitted from the equation. These include:

- heat island effects,
- reduced air quality from less trees and more traffic,
- infrastructure construction and maintenance (roads, schools, etc.),
- higher crime rates, and
- related social issues.

When evaluating the pros and cons of higher densities, these quality of life issues must be given equal weight. CWCB does not have land use planning expertise and must resist the temptation to preempt local control authority in the name of water conservation. This subject should be studied before further recommendations by the State are made, and the language should be amended accordingly.

P. 189 Action "Over the next eighteen months, the CWCB will develop new guidance for water conservation plans to require the incorporation of land-use practices."

As stated above, CWCB lacks the expertise to expand its authority to land use practices. Before this action item is pursued, further consideration should be given to whether CWCB or any other state agency has the constitutional and/or statutory authority to insert itself into local land use planning. This item should be deleted.

Chapter 10 - Critical Action Plan

P. 397, #3 - "Relevant state agencies will actively participate...in federal NEPA permitting processes at the outset of the regulatory process to engage in scoping, developing alternatives...etc."

As stated earlier, we believe that the state's role is currently effective and see no reason to change it without risking duplication of authorities. This item should be deleted.

Greeley appreciates the opportunity to comment on Draft Two of Colorado's Water Plan, and we commend CWCB staff for their assistance throughout this process.

Sincerely,

Burt Knight
Director of Water and Sewer

cc: Eric Reckentine

PUBLIC INPUT ITEM 157

Colorado State Water Plan Projects

Town of Buena Vista, CO

Date: September 17, 2015

From: Brandy Reitter, Town Administrator

To: Colorado State Water Plan

Subject: Town of Buena Vista Water Project Submission to the Colorado State Water Plan

The Town of Buena Vista is proactively seeking out ways to increase our water rights portfolio, preserve water quality, increase storage and capacity, and plan for smart growth in the future. As a water utility the ability for us to provide water to our service area will depend on the projects we are submitting to the Colorado State Water Plan. This letter provides a detail description of each project. Please consider including these projects on the plan so that they become eligible for funding at a future date.

Buena Vista Water Projects:

Project Name: ACA Gravel Pit Reclamation Reservoir

Description: The property and business owner of the ACA asphalt and concrete plant is preparing to close in the next 5 years or sooner. Extraction of the materials is almost complete and the operation will move to another location in Chaffee County. The owner is prepared to donate the pit to the town which is approximately 40 acres. The town and the owner would like to convert the pit into a water storage reservoir once the extraction is done. The town's projected growth will occur south of the town and this reservoir would satisfy the water storage needs of the town. The owner will receive credit for reclamation of the gravel pit. At a minimum the reservoir will hold 75 acre feet of town's decreed water.

Estimated Cost: $7,000,000

Project Name: New Well Construction (Well #4)

Description: The Town of Buena Vista would like to drill a well to diversify our source water and shift water resources from Cottonwood Creek to the Arkansas River. This well would pump 100 gallons a minute and be both potable and non-potable for outdoor irrigation. This well would help town provide water to residents as a back up to our water treatment plant. The town is proposing one of two locations. The location of the well will either be at the confluence of the Arkansas River and Cottonwood Creek, or north of Ice Lakes in the Arkansas drainage basin. The goal of this project expands town's water portfolio.

Estimated Costs: $200,000

Project Name: Leasmeagh- Gorrel Meadow Dry Up

Description: The Town of Buena Vista has a water right that produces 2.66 cfs if the town proves dry up of a portion of the Gorrel Meadow. The dry up encompasses approximately 60 acres of land west of town along Cottonwood Creek. Once the meadow is dried up the town can use the water to provide service to the residents of Buena Vista.

Estimate Costs: $400,000

Project Name: Upper Arkansas Water Conservancy District and Town of Buena Vista Alluvial Water Storage Multi Use Project Partnership

Description: The Upper Arkansas Water Conservancy District is proposing an alluvial water storage solution in the upper Arkansas Valley. If successful this project will provide a substantial amount of water for the district. The town is preparing to partner with the district on this project in an effort to diversify the water portfolio and increase storage options. The alluvial storage project can be described as an underground water drainage basin that is comparable to an underground river that if tapped, could produce water for the whole valley, including the Town of Buena Vista.

Estimated Costs: Unknown

Project Name: Cottonwood Lake Dam Improvements

Description: The town is working with the Upper Arkansans Water Conservancy District and the U.S. Forest Service to expand the water storage capacity on Cottonwood Lake. Improving the dam and outlet structures will allow the participating parties take advantage of the dead pool. This project would yield approximately 25 – 50 acre feet of additional water use on the lake.

Cottonwood Lake is the Town of Buena Vista's main storage vessel and currently there is no additional space for water storage in its current condition.

Estimated Costs: Unknown

Project Name: Buena Vista Water Treatment Plant Facility

Description: The town is looking to construct a water treatment plant no later than 2022 to meet the water demands of the community. The current facility is aging and the technology is obsolete. The new water treatment plant would be constructed either at the ACA gravel pit reservoir that is proposed in the Colorado State Water Plan or next to the Trout Creek Reservoir.

Estimated Costs: $10,000,000

Project Name: Cottonwood Creek Gaging Stations

Description: Cottonwood Creek needs two more gaging stations to accurately monitor stream flows. One is needed on North Cottonwood Creek and the other right above the confluence of the Arkansas River and Cottonwood Creek. This will allow the town to monitor stream flows as a matter of public safety, water quality control, and for reporting purposes. Currently there is only one gaging station and its readings are not always accurate.

Estimated Costs: $140,000

Project Name: Trout Creek Reservoir Storage and Dam Project

Description: The owner of Trout Creek Reservoir is proposing to raise the current dam to increase the storage capacity of the reservoir. Town will partner with the owner to purchase a share of the storage that amounts to approximately 13 acre feet of water. This project diversifies our water, increase water storage, and allows the town to provide service in the growth and water services areas. The town already has a water pipe under the Arkansas River that would allow for future water distribution in newly annexed areas in and around Johnson Village utilizing water storage on Trout Creek Reservoir.

Estimated Costs: Unknown

The Town of Buena Vista respectfully requests that the water project list above be included in the Colorado State Water Plan. If you have any questions please contact Brandy Reitter, Town Administrator at 719-395-8643 ext. 13 or at bvadmin@buenavistaco.gov.

PUBLIC INPUT ITEM 158

USDA United States Department of Agriculture
Forest Service
Rocky Mountain Region
740 Simms Street
Golden, CO 80401
303-275-5350
FAX: 303-275-5366

File Code: 2500
Date: SEP 17 2015

Rebecca Mitchell
Chief, Water Supply and Planning Section
Colorado Water Conservation Board
1313 Sherman, 7th Floor
Denver, CO 80203
rebecca.mitchell@state.co.us

Dear Ms. Mitchell:

Thank you for the opportunity to comment on the July 2015 Draft of the Colorado Water Plan.

This second draft builds successfully on the first draft, and continues to set an important vision for Colorado's water future.

As you move forward with finalizing and implementing this plan, I would like to continue to work with you to identify opportunities for National Forest System lands and programs to support Colorado's water values. Throughout the plan, there are goals and actions where our agency mission aligns. In particular, Chapter 10 sections II (Promote Multi-purpose Initiatives) and V (Support a Strong Environment and a Robust Recreation Industry) identify a number of potential areas for working together.

I encourage you to work directly with my staff as you continue to develop and implement these actions. Please contact Acting Director of Renewable Resources Cherie Hamilton at 303-275-5002 or cehamilton@fs.fed.us for further discussion.

Again, congratulations on this impressive effort. We look forward to working with you to ensure that National Forest System lands in Colorado continue to contribute to collaborative solutions for the state's water future.

Sincerely,

for DANIEL J. JIRÓN
Regional Forester

cc: Cherie Hamilton, Jim Bedwell, Polly Hays, Cheri Ford

PUBLIC INPUT ITEM 159

United States Department of the Interior

NATIONAL PARK SERVICE
INTERMOUNTAIN REGION
12795 West Alameda Parkway
P.O. Box 25287
Denver, Colorado 80225-0287

IN REPLY REFER TO:

September 17, 2015

Colorado Water Conservation Board
1313 Sherman Street, Room 721
Denver, CO 80203

Dear Board Members:

The National Park Service (NPS) respectfully submits the following comments on the Colorado Water Plan (Water Plan or CWP). Our comments are consistent with the NPS mission -- to preserve unimpaired the natural and cultural resources and values of the national park system for the enjoyment, education and inspiration of this and future generations. The NPS' Colorado River Basin Parks Program includes eleven units within the Colorado River Basin that encompass 1,130 river miles and more than 5 million acres of surrounding land. Management decisions regarding the river system have the potential to affect the unique natural, cultural, and recreational resources of these park units including those downstream in other states.

Again, NPS recognizes the rights of states to develop their water and appreciates the State of Colorado's efforts on the CWP. We appreciate your responses to our comments provided in our March 20, 2015 letter; however, we still remain concerned about many of the issues raised in our previous letter, particularly about climate change and potential long-term effects to our park resources in the Upper Basin. We also still see the opportunity and need for more environmental and recreational value inventories and non-consumptive use assessments in many basins. We value the dialog and cooperation we have with the State of Colorado on many processes currently and look forward to more dialog on these issues. Additional comments for your consideration are included below.

Thank you for this opportunity to comment on the second draft of the CWP. We look forward to working with the State of Colorado further on the Water Plan and issues affecting NPS system units which arise from it. Please contact Rob Billerbeck, NPS Colorado River Coordinator, for additional information or for more in-depth discussion on these comments. Rob can be reached by telephone (303-987-6789) or by electronic mail at rob_p_billerbeck@nps.gov.

Sincerely,

for Sue E. Masica
Regional Director
Intermountain Region
National Park Service

CC:

NPS Colorado River Steering Committee Members:

- Martha Lee, Acting Regional Director, Pacific West Region
- Ray Sauvajot, Associate Director, Natural Resource Stewardship and Science
- Bruce Noble, Committee Chair and Superintendent, Black Canyon of the Gunnison National Park and Curecanti National Recreation Area
- Dave Uberuaga, Superintendent, Grand Canyon National Park
- Lindy Mihata, Acting Superintendent, Glen Canyon National Recreation Area and Rainbow Bridge National Monument
- Mark Foust, Superintendent, Dinosaur National Monument
- Kate Cannon, Superintendent, Arches National Park and Canyonlands National Park
- Lizette Richardson, Superintendent, Lake Mead National Recreation Area

NPS Staff:

- Tammy Whittington, Associate Regional Director, Resource Stewardship and Science, Intermountain Region
- Karen Breslin, Senior Policy Advisor, Intermountain Region
- Rob Billerbeck, Colorado River Coordinator, Intermountain Region
- Ed Harvey, Chief Water Resources Division, Natural Resource Stewardship and Science
- Bill Hansen, Water Resources Division, Natural Resource Stewardship and Science
- Mark Wondzell, Water Resources Division, Natural Resource Stewardship and Science
- Peter Fahmy, Water Resources Division, Natural Resource Stewardship and Science

Under Federal Agencies (pg 30), please change *"Black Canyon of the Gunnison"* to *"Black Canyon of the Gunnison National Park"* for consistency and clarity.

Under Federal Entities (pg 26-27), *"The U.S. National Park Service (NPS) manages substantial land holdings within Colorado for national parks and monuments (see Section 2.5 for the NPS)"* please add "national recreation areas" and "national historic sites" to the list of lands that the NPS manages. Also please clarify that Section 2.5 is specifically about tribal and federal reserved water rights.

Under Wild and Scenic Rivers (pg 251), please consider including NPS in the following sentence *"Currently, there are many river segments in Colorado that the USFS or the BLM have determined to be suitable for designation since the passage of the original Wild and Scenic Rivers Act in 1968."* We respectfully request that you also include the following sentence on page 252 *"Some NPS units have evaluated their resources for wild and scenic eligibility; however, most have not evaluated their suitability"* after *"However, several river segments in Colorado are currently being evaluated for wild and scenic eligibility and suitability by the BLM and the USFS as part of their current land and resource management planning processes."*

Under Critical Action Plan (pg 398), it appears that a comma is missing which misleads the reader to believe that skiing is the only type of recreation that the water plan is trying to support *"A productive economy that supports vibrant and sustainable cities, viable and productive agriculture, and a robust skiing[,] recreation and tourism industry..."*

PUBLIC INPUT ITEM 160

To the CWCB Board, Staff and Director,

Thank you for the opportunity to comment on the CWP. It has been a tremendous effort. This letter reflects my personal comments separate from the comments of Pitkin County, the Colorado River Basin 1177-Roundtable, the Club 20 Board of Directors CWP resolution, and the NWCOG water Q/Q committee- all groups with which I have participated and whose comments I wholeheartedly.

My primary comment is that I hope the Water Plan will adopt a high conservation standard across the entire plan. Having spent years learning about water issues across Colorado and the entire Colorado River System, the need to implement meaningful, advanced water conservation measures is readily apparent. As Colorado prepares for the next several million residents, it will be vastly easier and more cost effective to build to high conservation standards than to try to retrofit homes, businesses and communities' years after they are built.

The examples from AZ, NM, CA and NV, their struggles to maintain a stable water supply, the extreme measures & expense from not developing wisely, pretending that western states could develop in the same esthetic and manner as water-rich eastern states is a mistake Colorado shouldn't make.

It strikes me a being similar to the arguments against raising the Auto mobile café standards- industry has fought tooth and nail, and then complied successfully and society and our air quality are all the better for it. Residential real estate development will not be stopped with new water conservation and exterior watering limitations; those moving to or within Colorado know they have chosen an arid state in which to reside, and will appreciate the surety of water supply that conservation will bring.

The West Slope of Colorado has put a great deal of faith into the water plan efforts, stepping up to the table to have the adult conversation about future TMDs. It is time to end the denial and embrace the need for water sensitive land use planning and water conservation, otherwise the sum of the Water Plan will be 'business as usual' with some new flourishes. Without meaningful high levels of conservation the goals of the water plan-to save Front Range and West Slope AG, and to protect the water resources needed for a healthy environment and recreational economy will steadily fall by the wayside. If there is one truth on the west slope, it is that water that goes over the hill never comes back, and that it is the West Slope economies & West Slope ag that will take the big hit if the Colorado River System continues to fail from drought and over-appropriation to the extent that it falls below the power generation pool.

It is critical that the CWCB and the Governor take the reality-based position, show the strong leadership needed, and truly make conservation our North Star in guiding Colorado's future development.

Secondly, I hope that the Colorado Water Plan recognizes that many of the IPPs have not been vetted at any level, and that the ones that intend to move more water from the West Slope to the Front Range need to be as vigorous reviewed and held to high standards as any new TMD. An IPP is not a blank check, and must not be exempt from the high standards for reduction of impacts to sending basin that any new TDM will be held to. To that end, It is important that the CWP upholds county 1041 powers, and that the state not turn its powers against communities that will have IPPs projects removing more water from their native rivers and streams via State 'endorsement' of projects prior to a final EIS.

Thanks you again for your hard work, your time and consideration,
Sincerely, Rachel E. Richards
Pitkin County Commissioner

PUBLIC INPUT ITEM 161

Colorado Basin Roundtable Comments
On Draft No. 2 of Colorado's Water Plan

September 17, 2015

The Colorado Basin Roundtable applauds the improvements that the Colorado Water Conservation Board and its staff incorporated into the second draft of Colorado's Water Plan. Clearly, this advisory document strives mightily to balance the many interests and fears about water supply development, agriculture, the environment and recreation. This is both the plan's strength and its weakness. The strength is that the plan clearly lays out the challenges. The weakness is that in its 84 recommendations for actions, many call for important alignment of state resources within the state government, but none call out any specific actions – no matter the viewpoint -- that are a rallying cry for seriously denting the water supply gap for the next five million people who are predicted to move to Colorado. For instance, the plan does not support concerted actions to create conservations at the "high levels" that the CWCB's own work has detailed. And neither does it support the immediate digging of a new transmountain diversion (nor should it in the CBRT's position), although there are some who are ardent believers in that "silver bullet."

In this "local control" state, the plan as it is fashioned, is probably the best starting point. Therefore it is incumbent upon the CWCB and the Executive Branch to lay out a "next steps" program, once the plan is submitted to the Governor in December. The purpose of the next steps would be to tackle the controversial topics with an eye toward creating consensus on actions. However imperfect this suggestion might be, the need for a next steps program is paramount for the plan to have been worth the effort. That is not to say that the 2016 Statewide Water Supply Investigation (SWSI) is not an important next step. It is – a better refining of the gap is timely and necessary for informing next steps.

CBRT specific comments

The need for high conservation

It should be said from the top that the less Colorado goes after high conservation in its water supply challenge, the harder it will go after agriculture and the Colorado River as sources to satisfy the needs of growth. That conflicts with the Executive Order's calling out of values to sustain our agricultural heritage and economy and to the environmental, recreational values provided by the already heavily employed Colorado River. Furthermore, overdevelopment of the Colorado under current hydrology and climate change scenarios presents a risk to current water users on both sides of the Continental Divide. This risk factor is a top concern of the CBRT. These realities tell the CBRT that the state's need to tackle "high" conservation levels and its companion controversial issue of linking land use to water supply need to be top-of-the chart actions.

The second draft's inclusion of an "aspiration conservation goal" of 400,000 acre feet over the next 30 years is to be lauded as a big improvement over the first draft. The CBRT, however, thinks the CWCB's own "high" goal of 461,000 acre feet as described in its conservation technical work should be upheld in the plan. It has been said that municipal outdoor irrigation is but 3 percent of the state's water use. Outdoor water use, however, is roughly 50 percent of municipal demands in the irrigation season. In totality, it is the municipal gap – most often described as 500,000 acre feet -- that is driving the water plan. A high conservation level closes better than 90 percent of the gap. That is the more important

number than is 3 percent. We acknowledge that conservation is a tough question and that it has to consider local conditions. Nevertheless, the IBCC's Conservation Committee, in advocating the 400,000 goal, believed it could be met under the current trajectory of water provider programs, ever improving technologies and consumer actions.

The Metro Roundtable White Paper on conservation predicts that its members can reach a 129-gallons-per-capita-per-day (gpcpd) standard under current programs as they progress. But it says there needs to be greater support and a political will to do better. The CBRT holds out the state's high standard and the Metro gpcpd goal as mileposts to develop high conservation among water providers and consumers.

On the agricultural side of the efficiency and conservation equation, the CBRT cautions that the plan make clear that while there are opportunities in this sector, agriculture efficiencies can have numerous impacts on the river system, positive and negative. The easy thought is that more water is available in the river, but that is not always the case. Contractual agreements, minimum flow requirements, TMD operation agreements and return flows all have impacts on stream flows. Efficiency practices can also have great impacts to wildlife. Agriculture efficiencies must be evaluated and studied, location specific, with impacts to the system as a whole. This is why it is critical that the CWP states in its body, as well as in the IBCC Conceptual Agreement; "some locations lend themselves well to agricultural conservation (need to add ***and efficiency)*** practices, others do not, and a clear understanding of the affecting systems is necessary."

Chapter 9. Alignment of State Resources and Policies

9.4 Framework on More Efficient Water Project Permitting Processes

The CBRT supports the approach to streamline the permitting process whereby the state facilitates early coordination of permitting agencies and project proponents for the purpose of gaining an understanding of permit application data and information needs, mitigation concepts, timeframes, and such.

However, the CBRT is adamantly opposed to the concept of state endorsement of a project, in particular through the 401 certification process, before the completion of the final federal Environmental Impact Statement (EIS). The sole purpose of this endorsement is to apply political pressure on federal permitting agencies. The state should not assume a role as a proponent of a water project until the state regulatory process has been completed and the project has been agreed to by the impacted counties, conservancy districts and conservation districts in the area which would be impacted by the project.

Financing

Chapter 9 provides a number options to create revenue streams to support water supply and environmental projects. Certainly, financing of water-related projects at the state level is topic No. 1. We applaud the plan for raising these possibilities. What is also true is that we do not see any immediate way out of the financing conundrum given voters track record, our Constitutional limits and competing amendments. A separate statewide effort is trying to unknot the Constitutional problem. In the meantime, the CWCB has rightfully encouraged Roundtables to proceed on projects and processes contained in their Basin Implementation Plans. Water Supply Reserve Account (WSRA) funds are paramount to this. Therefore the plan should be lauded for making a case in Chapter 10 for improving the WSRA funding stream.

Additionally, the CBRT appreciates the $1 million made available in the current CWCB budget to support streamflow management planning. This addresses one of our BIP's priorities. We, as others, plan to apply for a portion of this money. Chapter 10 encourages continuation of this program, which is excellent. The CWP also should advocate for greater support of this program.

6.3.3 Land Use

As stated in a recent editorial in the Colorado State University's Colorado Water magazine (Jan/Feb 2015), solutions to enable water for the next five million residents cannot be accommodated with the practices that supplied the first five million. Colorado needs to better connect land use and development to water planning by changing the way we grow our urban and suburban areas, increasing efficiency in water use and infrastructure. The CBRT supports this section of the CWP, however we encourage the CWP to provide more actual policy recommendations such as proposing that all local government master plans contain water-use goals for their jurisdiction. That alone would initiate real assessment by land use entities on how to best achieve these water use goals in their unique socio-political setting, and how their future development approvals conform to these goals.

6.6 Environmental and Recreational Projects & Methods

The CBRT recognizes the need for a basinwide Stream Management Plans in our BIP in order to provide the necessary scientific detail to help balance the consumptive and nonconsumptive demands on our river systems. We appreciate the detailed focus on stream management planning in the CWP as well as the new source of funding made available in the 2015 CWCB Project Bill to help initiate these efforts. CBRT recommends strengthening the validity of stream management plans by including a CWP action item that the CWCB will work with basin stakeholders to implement the recommendations that come out of these stream management plans.

The Conceptual Framework

The CBRT voted to support the framework's inclusion in the CWP with the caveat that much more discussion and detail would be required. The CBRT advocates that one improvement to the framework would be a definitions sections to help future readers understand the context and references contained within this complicated set of principles.

The CBRT has adopted a set of definitions (and other policy initiatives) to state our viewpoint on this matter. This document is attached to our comments. We also want to call your attention to detailed comments on the conceptual agreement by CBRT member Mark Hermundstad on West Slope concerns regarding the seven points in the framework.

We are also including a pdf that points out some typos and math errors.

Colorado Basin Roundtable Definition of Terms Regarding the Seven Points Conceptual Framework for Discussing a New Transmountain Diversion in the Colorado Water Plan

June 22, 2015

Regulations, master plans, and legal agreements usually contain a definition section. The Colorado River Basin Roundtable proposes that the Statewide Plan include the following definitions with regard to the Seven Points Conceptual Framework.[1] The Colorado Basin Roundtable would ask that these definitions be placed in the main body of the water plan.

DEFINITIONS

Colorado River Compact Deficit means an instance in which the flow of the Colorado River at Lee Ferry falls below the obligation of the Upper Division States contained in Article III of the Colorado River Compact of 1922.

Conservation and Reuse. A plan for high conservation and reuse will be required as part of any new transmountain diversion (TMD) and will be reported in Interruptible Supply Agreements along with level of compliance at each update of the Interruptible Supply Agreement. Land use regulations that consider reliable water supplies are necessary in order to attain high conservation and reuse. High conservation will include best management practices and specific per capita demand reductions. Agricultural Conservation must be site-specific and consider potentially negative consequences of altering timing and amount of return flows.

Environmental Resiliency means the capacity of an ecosystem to respond to a disturbance by resisting damage and recovering quickly. A strong environment and healthy watersheds, streams and rivers are part of the Governor's Executive Order. Before any new TMD is permitted, a stream management plan for each watershed, stream and river in the west slope must be completed that indicates when the withdrawal would have detrimental impacts on the flora, fauna, and general ecology and resiliency of the stream river or lake or groundwater system from which the withdrawal is proposed and associated riparian areas. The stream management plan should identify baseline flows that maintain appropriate stream flow temperatures, flushing flows that flush sediment, and channel maintenance flows that

[1] Draft dated 5-26-2015. Participants who drafted these definitions include Garfield County Commissioner Mike Samson and County Manager Kevin Batchelder, and Colorado Basin Roundtable participants Lurline Underbrink-Curran, Jamie Harrison, Dave Merritt, Louis Meyer, Ken Neubecker, Chuck Ogilby, Jim Pokrandt, and Ken Ransford.

together maintain a healthy riparian environment. This information should mimic the natural hydrograph with enough regularity that the stream or river continues to function as it did prior to diversions from a new TMD. Environmental resiliency includes monitoring and adaptive management plans that ensure the stream management plan objectives are met.

Future West Slope Needs. A reasonable increment of future development above protection of the existing west slope uses must be identified prior to any new TMD. Existing uses on the west slope will be documented in an Insurance Policy developed within two (2) years of adoption of the Statewide Water Plan and this information will be utilized to determine future west slope needs. Applicable local control regulations and future needs within the affected basin, including agricultural, environmental and recreation needs, will be utilized in the approval of any new TMD and made part of any new TMD. Compensatory storage and methods for meeting both consumptive and non-consumptive uses must be provided.

Hydrologic Risk. Any new TMD would only divert when Colorado River System storage levels are such that the diversion of water by the TMD will not increase the risk of Colorado River Compact deficit during the next 10 year period as defined in Article III of the Colorado River Compact, and when such diversions will not increase the amount of water that existing users must provide through a demand management program to maintain storage levels in Lake Powell. The new TMD project will be strictly administered under Colorado's priority system within its basin of origin and subject to applicable local regulations within the basin of origin. Prior to a water withdrawal or transfer, a party who bears or accepts Hydrologic Risk bears the burden of proof that the proposed or actual withdrawal of water will not negatively impact the basin of origin. With risks outside of the basin of origin, the new TMD would be subject to a detailed intergovernmental agreement governing the operation of the project.

Insurance Policy. An insurance policy will not cover a new TMD, and it will not be limited to new TMDs. An insurance policy will be developed by the CWCB in a public process in consultation with the Roundtables within two (2) years of adoption of the Statewide Water Plan that defines existing uses within the Colorado River System and particularly on the west slope of Colorado, determines a reasonable increment of future development for the east and west slopes, determines how a reduction in consumptive use in the Colorado River System will be accomplished to avoid a Colorado River Compact Deficit, and establishes a level of depletions in the Colorado River System that is covered by the insurance policy.

Interruptible Supply Agreements. Interruptible Supply Agreements will be provided by any East Slope entity participating in a new TMD. Interruptible Supply Agreements include but are not limited to agricultural interruptible supply agreements, Denver Basin and other eastern Colorado aquifer resources, carry-over and terminal storage, and drought restriction savings that can be drawn on by East Slope entities during years that water cannot be diverted from a new TMD. These agreements must be provided to West Slope entities affected by any new TMD, and permit West Slope entities to require that the Interruptible Supply Agreements are implemented. The agreements must be updated on a five (5) year basis and also report on the level of compliance with its conservation and reuse plan. The Interruptible Supply Agreement will remain in effect during the lifetime of the new TMD.

New Transmountain Diversion (New TMD). Any new transmountain diversion project that would remove water from a watershed on the western slope of Colorado to the Eastern slope of Colorado that is not currently in the permitting process as of June 1, 2015. A New TMD would also include the reoperation or increase capacity of an existing transmountain diversions if more water is removed from the western slope of Colorado to the Eastern slope of Colorado.

A New TMD does not include the Eagle River MOU, Windy Gap Firming Project or Denver's Moffat Expansion.

Trigger means a measurable standard that defines when any new TMD cannot divert water or must limit water withdrawals. Triggers must be agreed upon and put in place by all potentially impacted stakeholders in evaluating whether to take or not take a proposed action. Examples of a "Trigger" include, but are not limited to, a storage elevation level at a reservoir; projected baseline, flushing, and channel maintenance flows at particular locations on a river or stream; an average flow over a defined period of time; or impacts to West Slope agriculture. Triggers must be specified in any Interruptible Supply Agreement and be enforceable by local jurisdictions affected by the TMD or by the Colorado River Water Conservation District as representative of Colorado River Basin users and providers.

Approved by consensus of the Colorado Basin Roundtable, June 22, 2015.

The North Platte Basin Roundtable chose to address their basin goals through the identification of projects and methods that meet those identified needs and concerns. In their analysis of projects, the roundtable determines which specific basin goals each project may address, and generally outlines potential challenges to implementation. The roundtable also provides a list of planned environmental and recreational projects, which address specific attributes that the roundtable has identified as important to basin citizens and stakeholders.

Click to review the North Platte Basin Implementation Plan.

Rio Grande Basin

The Rio Grande Basin Implementation Plan provides an in-depth look at the basin's issues and proposed solutions, beginning with a comprehensive overview of the basin itself. The processes for Colorado's Water Plan and the Basin Water Plan are discussed, with an explanation of the Rio Grande Basin's unique challenges and subcommittee approach to BIP development. The basin overview includes an analysis of factors within the basin affecting water management, including geography, the history of development, and legal frameworks such as the Rio Grande Compact and the administration of water rights.[26] This overview provides a backdrop for the parts of the plan to follow, and describes the landscape in which the plan intends to establish solutions for water-management challenges.

The plan goes on to define goals and measurable outcomes, which were informed by the public outreach process that the roundtable undertook, as well as by discussions at the roundtable level. The goals seek to address the key attributes of the basin: "a resilient agricultural economy, watershed and ecosystem health, sustainable groundwater resources, the encouragement of projects with multiple benefits, and the preservation of recreational activities."[27] The goals and accompanying measurable outcomes are supported by modeling efforts and scenario planning, with the idea of preventing "harm to existing water rights while maximizing Colorado's entitlement under the Rio Grande and Costilla Creek compacts."[28] Goals are further explored, by identifying the particular water needs that each goal meets, be it agricultural, M&I, environmental and recreational, or related to water administration.[29] The Plan discusses these various needs, analyzes how these needs interrelate, and looks to the future of each sector.

After setting the stage with the basin overview and the goals, which look to the future of the basin, the plan explores solutions. Projects and methods are examined and compared to the list of basin goals. Certain projects, which meet multiple basin goals, are selected for review in a project fact sheet.[30] The fact sheet provides a closer look at the project, with information such as project proponent, estimated budget, and an indication of which the basin goals the project meets. The plan also provides an estimate of funding needs for these identified projects and includes a list of projects that meet environmental and recreational information gaps, paving the way for more informed project identification in the future.[31]

After project and method identification, the plan examines the means by which implementation may be possible. First, the outreach and educational efforts of the roundtable are summarized, with a plan for future efforts. Then, strategies for implementation are discussed.[32] These strategies include stakeholder involvement, future modeling improvements, and cooperative in-basin water

Southwest Basin

Through the BIP process, the Southwest Basin Roundtable sought to address the many complexities of that basin: nine sub-basins, various compacts and treaties, and the disparate interests of stakeholders within that corner of Colorado.[41] Agricultural, M&I, environmental, and recreational needs all play a role in the Southwest landscape, and the roundtable seeks to address them with equal attention through the BIP process.

As a Colorado River system basin, the Southwest Bsin Roundtable expresses concern regarding new development from that system as part of a new transmountain diversion.[42] Compact concerns, as well as potential future needs within the Southwest basin itself, underpin this issue. To this end, the roundtable has set forth seven factors to be considered before development, as well as a commitment to remain involved in statewide discussions on the matter. Interwoven with these transmountain diversion policies is a commitment to higher levels of conservation for water providers receiving any new diversion.[43]

Interaction between state and federal entities is also identified as a key concern and opportunity by the roundtable. The BIP specifies that "the roundtable encourages and supports creative solutions sought through collaborative efforts" regarding federal policies and actions, as well as the issue of tribal water rights.[44] Recognizing the importance of environmental and recreational attributes to the basin, the roundtable has placed an emphasis on a greater understanding of the water needs for maintaining these values, identifying two methods to address the need for data and assessment.[45]

The Southwest Basin Roundtable also undertook an ambitious public outreach process, soliciting input from basin stakeholders. From this public outreach and roundtable discussions, the Southwest Basin Roundtable adopted 21 goals and 30 measurable outcomes.[46] The basin took an aggressive approach to listing new identified projects and processes, identifying 80 new projects and methods through the input process, bring the total list of IPPs for all sub-basins to about 160 proposals for meeting future water needs.[47]

Click to review the Southwest Basin Implementation Plan.

Yampa/White/Green Basin

The Yampa/White/Green Basin Roundtable views the BIP process as an opportunity to articulate stakeholder viewpoints from northwest Colorado, informing ongoing statewide discussions and the Colorado's Water Plan process.[48] To that end, the roundtable encouraged dialogue at the roundtable level and in the public outreach process to set a vision for the basin moving forward. This basin vision includes an assessment of meeting in-basin future needs at the M&I, agricultural, and environmental and recreational levels. Also, the roundtable examines the Yampa/White/Green Basin's role within Colorado and establishes statements of policy on interbasin and interstate concerns.

Of key concern to the roundtable is the basin's role in the Colorado River system. The roundtable emphasizes the role of the Colorado River Compact and the competing needs of "downstream states, the needs of the urbanized eastern slope of Colorado, and its own in-basin needs."[49] The roundtable advocates for an "equitable allocation of native flow in the Yampa, White, and Green

rivers to meet existing and future in-basin water demands including PBO depletion allowances."[50] This concept is discussed in more detail in Chapter 8.

The primary goal of the roundtable is to ensure the "maintenance and protection of historical use in the Yampa/White/Green Basin as well as the protection of water supplies for future in-basin demands."[51] To that end, the roundtable members identified eight primary basin goals.[52] Within basin goals, the roundtable seeks to address potential shortages and improve the current infrastructure, with an emphasis on water quality and nonconsumptive uses.[53]

The roundtable integrated ongoing studies into the BIP process, using their 2014 Projects and Methods Study to analyze potential water-supply solutions under various hydrologic scenarios. This study, along with the BIP outreach process, resulted in a list of potential projects and methods within the basin, and an analysis of water availability, with implementation of identified projects and processes and their effect on nonconsumptive values.[54] Moving forward, the roundtable will continue to refine ongoing studies, seek additional projects and methods, and continue the outreach and education efforts initiated within the basin.[55]

Click to review the Yampa/White Basin Implementation Plan.

Conclusion

As demonstrated in this brief overview, each basin features its own remarkable opportunitiesand its own distinct challenges that make planning for Colorado's water future difficult. Solutions will affect not only one basin, but basins throughout Colorado. Though each area is characterized by unique issues and concerns, our water future is connected statewide. Every basin grapples with drought, interstate compacts and agreements, growing populations, important environmental and recreational values, and sustaining agriculture. Because of so many shared interests, we need to continue working together to collectively solve our water-supply gaps, so that the Colorado we value can continue to flourish.

---

[1] Arkansas River Compact, Art. IV, para D, 1948.
[2] WestWater Research, CDM Smith, CH2MHILL, Peak Facilitation, *Arkansas Basin Implementation Plan* (Colorado Springs: WestWater Research, 2014), Executive Summary.
[3] WestWater Research, *Arkansas Basin Implementation Plan (2014).*
[4] WestWater Research, *Arkansas Basin Implementation Plan.*
[5] WestWater Research, *Arkansas Basin Implementation Plan.*
[6] WestWater Research, *Arkansas Basin Implementation Plan.*
[7] WestWater Research, CDM Smith, CH2MHILL, Peak Facilitation, *Arkansas Basin Implementation Plan* Executive Summary.
[8] WestWater Research, CDM Smith, CH2MHILL, Peak Facilitation, *Arkansas Basin Implementation Plan.*
[9] SGM, *Colorado Basin Implementation Plan* (Glenwood Springs: SGM, 2014), 1.
[10] SGM, *Colorado Basin Implementation Plan.*
[11] SGM, *Colorado Basin Implementation Plan, 3-5.*
[12] SGM, *Colorado Basin Implementation Plan.*
[13] SGM, *Colorado Basin Implementation Plan, 125.*
[14] SGM, *Colorado Basin Implementation Plan, 125.*
[15] Wilson Water Group, *Gunnison Basin Implementation Plan* (Denver: Wilson Water Group, 2014) Executive Summary.

and-low-regrets actions. As part of this work and in partnership with the basin roundtables, the CWCB will evaluate progress toward achieving the no-and-low-regrets actions.

2. **Monitor drivers:** To determine which scenario Colorado will most likely face, the CWCB will work with partners, such as the Climate Change Technical Advisory Group, to monitor the critical drivers of water supply, demand, and the level of "green" versus "full resource use" values through future Statewide Water Supply Initiative updates and other technical work. As part of this work the CWCB will work with stakeholder groups to update the scenarios and adaptive strategies.
3. **Promote use of scenario planning & adaptive strategies:** The CWCB and the basin roundtables will continue to use and promote scenario planning and the use of adaptive strategies to respond to, mitigate for, and prepare for climate change. The CWCB will also encourage and facilitate the adoption of adaptive strategies for municipal, industrial, agricultural, environmental, and recreational needs as Colorado moves into the future in partnership with project proponents.
4. The CWCB and the Division of Water Resources (DWR) will continue to develop and support Colorado's Decision Support Systems (CDSS) to encourage data-driven planning and decision making.

6.2 Meeting Colorado's Water Gaps

Colorado's Water Plan uses a grassroots approach to formulate projects and methods that avoid some of the undesirable outcomes of the supply-demand gaps. The plan addresses the gap from multiple perspectives (e.g., water storage, reuse, recycling, integrated water management, restoration and conservation)..

Overview

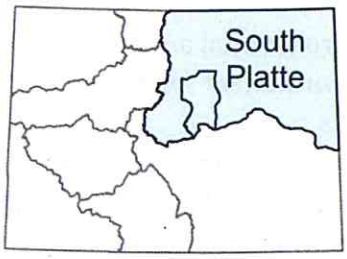
This section describes how the basin roundtables' BIPs meet Colorado's growing municipal, industrial, agricultural, environmental, and recreational water needs. This section describes the BIP goals and measurable outcomes and identifies by basin the remaining needs that must be met to accomplish those objectives. These remaining needs are referred to as "gaps." The section relies on previous technical work conducted in the SWSI 2010, the Basin Needs Assessments, and the no-and-low-regrets work described in Section 6.1. Finally, this section ends with a list of actions to support closing Colorado's water gaps. In comparison, Sections 6.3 through 6.6 indicate the types of projects and methods the BIPs consider and the actions needed to support them.

Colorado's Water Plan does not prescribe or endorse specific projects. However, implementing a combination of projects and methods, as outlined in the BIPs, will be necessary to meet Colorado's current and future municipal, industrial, agricultural, environmental, and recreational water needs. Failing to implement the projects and methods outlined in the BIPs will result in an even greater water gap in Colorado's future.

In compiling its BIP, each basin roundtable developed goals and measurable outcomes that add up to a vision for how each basin plans to support each major sector. While a water supply gap for M&I needs is relatively easy to quantify, the future needs of agriculture, the environment, recreation, and other uses identified in the BIPs, are based on the vision of each basin roundtable.

- Measures to manage water demands and return flows and develop methods to receive augmentation credits for wastewater discharges and lawn irrigation return flows.
- Water rights, storage and augmentation supplies, either directly or through the groundwater management subdistricts.
- Finalization of the Rio Grande Decision Support System groundwater model so that M&I pumping depletions can be determined in amount, timing, and location.[52]

Because of this, the Rio Grande has not yet quantified its future M&I gap. Once well pumping depletions have been determined in amount, timing, and location, the M&I providers will either join a subdistrict or develop an independent augmentation plan.



South Platte (including the Metro Area and Republican Basin)

The Metro, South Platte, and Republican Basins face a municipal gap that could begin as early as 2020 in the Lower South Platte. When taking into account the need to replace nontributary groundwater, in the South Metro area, that gap already exists.[53] The potential gap in the Lower South Platte is relatively small compared to the urbanized Front Range, which holds the largest gap in Colorado. Future needs in the basin as a whole are likely to increase by 340,000 to 505,000 acre-feet. However, the additional water needs from hydrologic fracturing must be added to the water supply gap. With existing data, currently planned projects leave a municipal water supply gap within Colorado's northeast region of 203,000 to 312,000 acre-feet. This assumes that identified projects and processes are implemented at a relatively high success rate.[54]

South Platte goals and measurable outcomes

To address this M&I gap, the South Platte BIP developed a long-term goal to meet M&I needs:[55]

> Meet community water needs throughout Colorado by: 1) Using water efficiently with high levels of participation in conservation programs; 2) Developing additional water throughout the state through balanced, multi-purpose projects and methods; and 3) Assuring strong drought protection programs through broad development of protection plans and dedicated reserves potentially including storage, interruptible service agreements (ISAs), water banks, water use restrictions and non-tributary groundwater, among others.

In the short-term, the South Platte developed four goals and associated measurable outcomes to meet the large M&I water supply gap in the South Platte Basin:[56]

- Continue the South Platte River Basin's leadership in wise water use.
  - Further quantify the successes of programs implemented in the past several years throughout the South Platte River Basin and establish a general baseline against which the success of future programs will be assessed.

Table 6.3.1-2: South Platte and Metro Basin Conservation Goals

Measure	Metro			South Platte		
	Baseline 2010	2050	Reduction (%)	Baseline 2010	2050	Reduction (%)
Residential Indoor	43.7	34	22	60.1	40	33
Non-Residential Indoor	37.5	32	15	39.2	33	15
Outdoor	62.8	54	15	73.7	63	15
Water Loss	10.9	9	17	15	10	33
TOTAL	**155**	**129**	**17%**	**188**	**146**	**22%**

The South Platte/Metro Basin shares some examples of future work that will help achieve conservation savings. The South Platte/Metro Basin suggests that "further standardization of the term "per capita water use" and improvement in the understanding of the factors impacting water consumption rates can help the basin and State better understand the ways that conservation programs and reductions in per capita water consumption can help meet supply gaps."[166]

Additionally, the South Platte/Metro Basin states that certain regulatory, rate structure driven, educational, and incentive based approaches will assist in achieving conservation goals. "Providers encourage conservation through water rate designs, education, watering schedules, and rebate programs as well as water waste rules. Finding effective methods to strengthen code requirements and enact stronger land-use regulations will be an important factor in building efficiencies through conservation."[167]

Finally, the South Platte/Metro Basin finished with thoughts on how more water efficiency could occur:

- Greater savings in outdoor water use would require major changes in landscaping that moves beyond just efficiency measures; this would involve lifestyle considerations about our urban environments. These decisions must be made and implemented at the broader community level, as well as at the water-planner level.
- Higher levels of indoor conservation will require broad political and public support.
- Land-use planning has the potential to promote densification, growth management, and comprehensive plans to include considerations for impact fees and firm yield.

The Metro and South Platte Basin Roundtables support ongoing statewide education to address these factors.[168]

Southwest Basin

The Southwest Basin has a "goal of promoting and incentivizing wise and efficient water use through implementation of municipal conservation strategies to reduce overall future water needs."[169]The Southwest Basin supports high conservation levels statewide. .

local providers to establish targets consistent with the IBCC identified stretch goal, while giving appropriate credit for recent strides made in demand reduction.

6. **Water conservation education and outreach:** The CWCB will develop an education and outreach strategy that includes water conservation topics. More detail regarding specific education and outreach recommendations are detailed in Section 9.5. The education and outreach recommendations outlined in Section 9.5 will tie together the other actions illustrated within this section and provide the "why" for carrying out these actions. These efforts will be rooted in each BIP and carried out to address specific issues that occur in each basin. This work will include surveys of public attitudes and partnerships with water providers and other water educators.
7. **Support local water smart ordinances:** Over the next two years, the CWCB will provide trainings that support local regulatory efforts that shape how new construction interacts with water use to accomplish local water conservation goals. For example, local jurisdictions could craft landscape and irrigation ordinances, tap fees that reflect actual water uses, education or certification of landscape professionals, green infrastructure ordinances, and more stringent green construction codes that include higher efficiency fixtures and appliances and water-wise landscapes. This action is further explored in Section 6.3.3.
8. **Evaluation of barriers to green building and infrastructure**. CWCB and CDPHE will work together to determine which state agencies govern green infrastructure and buildings, identify barriers, and work with the appropriate agencies to adapt regulations to allow for graywater, green infrastructure, and other aspects of green developments.
9. **Strengthen Partnerships:** The CWCB will create or renew partnerships between the CWCB and the following groups to reach water conservation goals:
    a. Local Water Providers and Local Governments- to implement water conservation programs to benefit their water systems.
    b. Intra-state government (Department of Local Affairs, DWR, Department of Regulatory Agencies (DORA), and state facilities) to coordinate and implement incentives.
    c. Green Industry (GreenCO, Irrigation Association, Associated Landscape Contractors of Colorado) to implement efficient landscape installations and maintenance.
    d. Home Building/Construction (Home Builders Association, LEED, U.S. Green Building Council) to implement water-smart homes.
    e. Non-Governmental (Colorado WaterWise, Alliance for Water Efficiency, Western Resources Advocates, American Water Works Association, Water Research Foundation) to help educate Coloradans and further conservation innovations and research.
    f. Academia (Colorado State University, CU-Boulder, CU-Denver, One World One Water Center-Metropolitan State) Bring a consortium of businesses, academia, etc. to examine behavioral science and research conservation innovations.

10. **Explore expanding conservation funding:** As Colorado water providers implement more sophisticated and integrated water conservation programs, annual funding for the Water

Projects and methods summary: The roundtable identified a total of 120 projects and methods on the IPP List that meet municipal, industrial, or agricultural needs.[328] 17 of these projects identify acre-feet, totaling 166,500 acre-feet of development.

Colorado Basin

Primary message: The Colorado Basin Roundtable is focused on completing a basin-wide stream management plan, with more in-depth analysis and understanding of the amounts of water necessary to maintain environmental and recreational attributes. The basin roundtable expressed concern about the uncertainty regarding the ability of current water supplies to meet in-basin consumptive use, as well as environmental and recreational needs, for future projects and methods. The basin emphasized the need for more in-depth studies and work on the effects of climate change on water supplies and the variability of wet and dry years. The roundtable stated: "the most prudent planning approach… is to assume that there is no more water to develop for export from the Colorado Basin."[329] The extensive public outreach undertaken by the basin, as described below, resulted in a comprehensive list of potential identified projects and methods, which make up a suite of options for the basin to meet their future needs.

Process: The roundtable members divided into Project Leadership Teams (PLTs), which focused on particular subject matter areas within the BIP. The consumptive PLT worked to identify projects within the basin that would meet future water supply needs. The PLT interviewed water providers throughout the basin, in person or through a standardized questionnaire. These information gathering efforts focused on existing and forecasted supply, as well as projects and methods to meet demands. Existing studies or reports were also analyzed for planned projects. The basin held town hall meetings and roundtable members and consultants traveled to many meetings, such as county commissions and city councils, to gather information. Roundtable members took a closer look at the list of projects and methods, and then identified representative projects in each subregion of the basin that met basin themes and subregion goals. These projects were designated "Top Projects" and represent important needs both at the basin-wide and subregion level.

Colorado Basin at a Glance

28 projects identified as Top Projects which meet municipal, industrial, or agricultural needs

$135,000,000 in costs identified for **13** projects

21,472 acre-feet of development identified for **3** projects

Projects and methods summary: The roundtable identified a total of five basin-wide Top Projects and methods.[330] Twenty-six Top Projects were identified by subregion. All 26 subregion projects were identified as multi-purpose. Beyond the identified Top Projects, additional projects and methods submitted through the public input and targeted technical outreach are listed in the BIP Exhibits.

Basin Top Projects were evaluated by Basin Goals:

- 21 Top Projects were identified that meet the basin goal of "Sustain Agriculture."
- 23 Top Projects were identified that meet the basin goal of "Secure Safe Drinking Water."[331]

The Colorado Basin Roundtable established several themes to sum up and organize the input received from basin stakeholders. Theme #1 is: "Protect and Restore Healthy Streams, Rivers, Lakes, and Riparian Areas."[440] In its identification of Top Projects, the roundtable identified several projects that complement this basinwide theme. Central to this theme is the roundtable's goal of establishing a basinwide stream management plan. Data gaps for environmental and recreational needs are a key issue of concern for this basin. The roundtable would like to see more progress statewide in scientifically quantifying the amounts of water necessary to maintain or improve these attributes.

The roundtable's identification of Top Projects and methods includes many with an environmental or recreational focus. Many of the identified projects include the acquisition of water rights to restore or protect streamflow, or flow-related recreational protection. The needs of endangered species in the Colorado basin are called out in the goals and measurable outcomes of the BIP, with species recovery as a measurable outcome to be achieved through habitat improvement and addressing invasive species.

Colorado Basin at a Glance

27 projects identified on the Top Projects list meeting environmental or recreational needs

$132,500,000 in costs identified for **13** projects

21,472 acre-feet of development for environmental or recreational needs identified by **3** projects

Moving forward, the roundtable plans to begin organizing the inventory of projects for potential implementation. To prioritize the projects and methods, the roundtable will examine each through the lens of the basinwide themes and will identify the projects that may serve multiple purposes or meet basin goals. Many of the water management related projects and methods may already be in the planning stages, such as some associated with the CRCA, or projects funded by the roundtable that contemplate multiple phases.[441]

Gunnison River Basin

The Gunnison Basin Roundtable identified two basin goals that address environmental and recreational water needs and then identified projects and methods within the basin that could assist in meeting those needs.[442] The roundtable compiled this inventory of projects and methods through outreach within the basin and participation by stakeholders in the BIP process. The roundtable also convened a group of environmental and recreational advocates, including staff from state and federal agencies, to provide input and assist in identifying focus reaches. As part of the BIP process, the roundtable approved the use of "project summary sheets," used to break down elements of projects and methods such as project proponent, project cost, and effectiveness at meeting basin goals.[443]

In organizing its projects and methods inventory, the roundtable established three tiers of projects, with timeline and effectiveness of meeting basin goals as the two criteria for tiering. The basin roundtable also identified 29 target stream reaches within the basin as areas where environmental and recreational projects and methods could be beneficial. While identifying potential projects and methods, the roundtable called out a series of ongoing efforts involving environmental protections and monitoring that help to maintain these attributes within the basin.

PUBLIC INPUT ITEM 163

Audubon ROCKIES

116 N. College Avenue, Suite 1
Fort Collins, CO 80524
Phone: 970.416.6931
rockies.audubon.org

September 17, 2015

Kate McIntire
Colorado Water Conservation Board
1313 Sherman St., Room 718
Denver, CO 80203

RE: Summary of National Audubon's Colorado Western Rivers Action Network (CO WRAN) Second Draft CWP Comments September 2015

Dear Kate:

Thank you for your time and efforts accepting and organizing Colorado Water Plan (CWP) public input. Also, congratulations on passing another milestone along the CWP path – final public comment deadline. The Colorado Western Rivers Action Network (CO WRAN) has grown to over 12,000 constituents across the state. We are proud to represent a significant percentage of the "unprecedented civic involvement" in the development of our Water Plan.

In September 2015 Audubon, through CO WRAN, generated 763 CWP individual comments through one action alert. Of the 763 comments, 85 comments were customized messages. All comments were submitted to both Governor Hickenlooper's office and to the Colorado Water Conservation Board. The September action alert focused on two messages. First, common-sense criteria for future water projects and water management. And second, a request to increase funding and scope for water stewardship education. To access the full alert and message:
https://secure.audubon.org/site/Advocacy?cmd=display&page=UserAction&id=1985

I have attached a spreadsheet containing all alert responses through September 16, 2015. The spreadsheet contains the names, towns, and customized response text in the first sheet, and a list of respondents who signed on to the alert as written in the second sheet. Please let me know if you have any further questions.

Again, thank you and congratulations,

Abby Burk
aburk@audubon.org
Western Rivers Outreach Specialist Audubon Rockies, Rocky Mountain Regional Office

Last_Name	First_Name	City	State
Mozian	Sue	Basalt	CO
Huggins	Janis	Snowmass Village	CO
Loose	Linda	Boulder	CO
Glaeske	Lynne	Denver	CO
Walker	Patricia	Greenwood Village	CO
Emerson	James	Grand Lake	CO
Legel	John	Fort Collins	CO
Cobble	Scott	Laporte	CO
Esson	Anne	Vail	CO
Spring	kathleen	Lyons	CO
norris	scott	Lakewood	CO
Andrews	Rick	Westminster	CO
Bourgeois	Paula	Woodland Park	CO
Kennison	Leigh	Denver	CO
phillips	weslie	Golden	CO
Wilson	Noel	Tabernash	CO
Parker	Don	Golden	CO
Coleman	Caroline Hill	Fort Collins	CO
Sternlieb	Faith	Fort Collins	CO
Millette	Robert	Glenwood Springs	CO
Creighton	Nancy	Boulder	CO
lancaster	juanita	Boulder	CO
Warwick	Cynthia	Fort Collins	CO
cole	michelle	Elizabeth	CO
Pearse	Martha	Denver	CO
Hartlein-Sowa	Lauren	Durango	CO
McKee	Richard	Longmont	CO
Anthony	Virginia	Aurora	CO
Vance	PK	Canon City	CO
Medbery	Angela	Denver	CO
Graae	Linda	Fort Collins	CO
Martinelli	Duilio	Colorado Springs	CO
Poolet	Michelle	Golden	CO
Sale	Alexandra	Longmont	CO
Struthers	Norma	Colorado Spgs	CO
Granias	Susan	Pagosa Springs	CO
Deever	Avonna	Lakewood	CO
Norlin	Deb	Denver	CO
Gonzales	Silas	Salida	CO
Austin	V	Lakewood	CO
Ohlson	Connie	FORT COLLINS	CO
Moller	Valerie	Pagosa Springs	CO
Sawatzki	Ginger	Littleton	CO
relyea	jason	Arvada	CO
Evans	John	Denver	CO
Tokunaga	Barb	Milliken	CO
Heuscher	Pauline	Cedaredge	CO
Dines	Anselm	Boulder	CO
Steele	L	Olathe	CO
Ohmstede	Lynn	Littleton	CO
Patterson	Liana	Louisville	CO

Garnica	David	Loveland	CO
Lasher	Karen	Salida	CO
Colyer	Marilyn	Mancos	CO
Grotzky	Marilyn	Boulder	CO
Weaver	Beatrice	Littleton	CO
Barnes	Angela	Denver	CO
Sage	Felice	Littleton	CO
Kalavity	Karen	Westminster	CO
Marie	Audrey	Ramah	CO
Lenway	Linda	Lakewood	CO
Wilkinson	Sally	Steamboat Springs	CO
Snyder	Tiffany	Boulder	CO
morgan	catherine	Glenwood Springs	CO
Erslev	Eric	Fort Collins	CO
Wargo	Marilyn	Pagosa Springs	CO
Walls	Fred	Lafayette	CO
Brooks	Kim	Oak Creek	CO
Basham	Wendy	Pueblo	CO
hickey	eileen	Longmont	CO
Louis	Susan	Golden	CO
Justice	Susan	Grand Junction	CO
Stocker	Robert	Denver	CO
Inouye	David	Crested Butte	CO
Lodenkamper	John	Wheat Ridge	CO
Tracy	Holly	Durango	CO
Scharff	Karelle	Ward	CO
Kingery	Hugh	Franktown	CO
Coons	Frank	Grand Jct	CO
Reetz	Polly	Denver	CO
DiGiallonardo	Gina	Fort Collins	CO
Heiman	Jeremy	Glenwood Springs	CO
Rayeski	Jon	Fort Collins	CO
WILLIAMS	LIZ	Littleton	CO
Huddle	Harriet	Golden	CO

PUBLIC INPUT ITEM 164

BOARD OF PUEBLO COUNTY COMMISSIONERS

September 17, 2015

VIA EMAIL: COwaterplan@state.co.us

Governor John Hickenlooper
Colorado Water Conservation Board
Diane Hoppe, Chair

Re: Pueblo County Board of County Commissioners Comments on July 2015 Draft of the Colorado Water Plan

Dear Governor Hickenlooper, CWCB Chair Hoppe, and CWCB Board Members:

The Pueblo County Board of County Commissioners ("Pueblo County") submits the following comments on the July, 2015 draft of Colorado's Water Plan (the "Plan").

Pueblo County has adopted a comprehensive Land Use and Planning Code that includes regulations governing Areas and Activities of State Interest pursuant to C.R.S. §§ 24-65.1-101, et seq. (aka "HB 1041") and under the Local Land Use Control and Enabling Act, C.R.S . §§ 29-20-101, et seq. Those County regulations, enforced in Pueblo County since 1975, as well as other standards and requirements of the Code, have been applied to address local impacts of new and extended domestic and municipal water systems and municipal and industrial water projects. The continued application of those local regulations to water projects is essential to ensure that the water supply, environmental, and recreational needs within Pueblo County are protected and enhanced. Importantly, the County's experience has been that Federal and State regulations and enforcement alone have been inadequate to protect against local impacts of water projects.

1. Several sections of the draft Plan in Chapter 9, "Alignment of State Resources and Policies," are of concern to Pueblo County as a regulatory authority.

(a) Land Use Authority and 1041 Permits.

The section of the Plan entitled "1041 Local Permits" (at page 362) should refer generally to other local government authority to regulate water projects, in addition to the authority granted by the Areas and Activities of State Interest Act, H.B. 1041. Among other powers these authorities include the Land Use Enabling Act, H.B. 1034, C.R.S. §§29-20-101 et seq. (as described in section 2.3 of the Water Plan) which have been applied by the Colorado Courts to support and extend the H.B. 1041 authority of local governments over water projects. See, *City of Colorado Springs v. Board of County Commissioners of the County of Eagle*, 895 P. 2d 1105, 1116-1117 (Colo. App. 1994) (*cert. denied* June 5, 1995).

PUEBLO COUNTY COURTHOUSE
215 W. 10TH ST., PUEBLO, CO 81003-2992
(719) 583-6000
FAX: (719) 583-6549
www.county.pueblo.org

To better describe the local government's authority, we suggest that the following sentence be added to the first paragraph of this section (at p. 362): "C.R.S. §§29-20-101 et seq., the Local Government Land Use Control and Enabling Act (1974) ("HB 1034") [as described in section 2.3] is another source of authority, along with others, which confers upon local governments the authority to regulate the development of water projects within their jurisdictions to ensure the protection of the environment and to provide for the planned and orderly use of land."

Additionally, this section states, at pp. 362-363, that "Local governments may not pass regulations that are completely prohibitive of the building of municipal water facilities and expansion of existing projects." This sentence overstates and takes out of context the holding of *City and County of Denver by and through Board of Water Com'rs v. Board of County Com'rs of Grand County*, 782 P.2d 753, 762 (Colo. 1989):

> The Land Use Act gives Grand County and Eagle County the power to regulate, but not to prohibit, Denver's operation of extraterritorial waterworks projects. See *Town of Glendale v. City and County of Denver*, 137 Colo. 188, 194-95, 322 P.2d 1053, 1057 (1958); cf. *City of Thornton v. Farmer's Reservoir and Irrigation Co.*, 194 Colo. 526, 533, 575 P.2d 382, 388 (1978) (Water Rights Condemnation Act violated article XX because it gave municipal commissions power to prevent acts of condemnation by home rule cities).

First, the holding in that case was limited to projects sponsored by home rule cities, but the statement in the draft Plan would apply it to all project applicants. Second, this statement could be read to perpetuate a common misperception that the local permitting authority may only regulate and not deny a 1041 permit for a specific project that fails to satisfy conditions that are legally imposed under H.B. 1041 and the implementing regulations. The Land Use Act specifically provides that the permit authority shall deny a permit for a proposed activity that does not comply with the guidelines and regulations. C.R.S. §24-65.1-501(4). Such denial does not abrogate the home rule authority of the permit applicant. *City of Colorado Springs v. Board of County Commissioners of the County of Eagle*, 895 P. 2d 1105, 1116-1117 (Colo. App. 1994) (cert. denied June 5, 1995).

To avoid confusion as to the local government's authority to deny a permit for a specific project, we recommend that the following sentence be added to the last paragraph of the section (at p. 363): "A permit may be denied for a specific water project that does not meet the standards or criteria of the local regulations."

(b) Framework on More Efficient Water Project Permitting Processes.

Pueblo County supports the early involvement of all stakeholders in the process for permitting water projects in order to make the process more efficient. However, the draft Plan sometimes omits a reference to the critical interests of local governments in this process, when focusing on upfront coordination among state and federal agencies. As representatives of communities that are likely to be the most affected by the development of new or enlarged water projects, and as permitting authorities, local governments must be included at every stage of discussion and consideration of such projects.

(c) State Endorsement of Water Projects.

Pueblo County does not believe that it is appropriate for the State of Colorado to endorse or become a sponsor of a water project in most cases. The CWCB and other State agencies are better suited

to the neutral role of facilitating discussions among competing interests rather than advocating for or against projects in permitting, especially when the State and its political subdivisions may have a regulatory responsibility. State endorsement has the potential to undermine the objective consideration of the impacts of and alternatives to proposed projects by both state and local government permitting bodies, and to contribute to unlawful prejudgments by State agencies in quasi-judicial permitting processes. At a minimum, the State government should remain neutral on proposed projects until all State and local permits and approvals, including approvals under all applicable county land use and environmental regulations, have been obtained and considered by the State.

2. Watershed Plans – Downstream Protection from Increased Stormwater and Imported Flows.

Pueblo County applauds the following statements in Section 7 of the Water Plan ("Water Resource Management and Protection") at page 281:

> When natural ecosystem functions are altered, a watershed no longer exists in equilibrium. The resultant changes to hydrologic function and water quality have direct effects on water supply and infrastructure. . . . Sediment is the most concerning non-point source pollutant contributed from our forested lands. An accelerated delivery of sediment in rivers has negative effects on both consumptive and nonconsumptive water uses. . . . Increased volumes of sediment are contributed as a result of erosion caused by high to moderate burn severity fires, forest road infrastructure with failing stormwater management infrastructure, and other processes in which the landscape is altered by human or natural causes.

The Plan, however, later recommends collaboration and partnerships in development of watershed plans, but focuses only on the effects of forest fires and climate change.

Pueblo County recommends that this Section 7 be enlarged to include a separate discussion of the effects on rivers of increased volume runoff from impervious urban surfaces and increased flows from imported water into rivers and streams. Pueblo County also encourages further discussion in the Plan over the Plan's recommendation at p. 303 that detained stormwater be considered as a source of municipal water supply. Finally, a more robust discussion of stormwater control in the Water Plan is also warranted by the passage this year of C.R.S. § 37-92-602(8) relating to the integration of stormwater facilities with water right administration.

To support its concerns over stormwater, Pueblo County offers the following background. Fountain Creek originates in El Paso County and continues through Pueblo County to its confluence with the Arkansas River. Fountain Creek is now far out of equilibrium as a result of development in El Paso County. Rapid growth in El Paso County, and the failure to fund, construct, and maintain adequate stormwater controls in the upper watershed, has caused tremendous damage downstream in Pueblo County from flooding, erosion, and sedimentation. Return flows from tens of thousands of acre feet of imported water and nontributary groundwater by water users in El Paso County have also increased the average flow of Fountain Creek four fold in recent times. A recent study by Wright Water Engineers for Pueblo County reports that about 370,000 tons of sediment are being transported and deposited each year in the Fountain Creek channel between the City of Fountain and Pueblo, causing the channel to rise in Pueblo and thereby reduce the flood protection of the Pueblo levees along Fountain Creek.

To help control Fountain Creek, the Colorado legislature enacted statutory authority for the formation of the Fountain Creek Watershed, Flood Control and Greenway District to develop a watershed plan and regulate activities within the Fountain Creek watershed. C.R.S. §§ 323-11.5-101, et seq. The District, however, has been hampered to date by the lack of funding to accomplish its mission.

Pueblo County therefore recommends the Water Plan include a separate subsection in Section 7 that comprehensively addresses topics such as existing and proposed regulatory authority over stormwater (such as Municipal Separate Stormwater Sewer System permits, "MS4"); sources of stormwater funding; water quality standards on streams to control sediment from urban runoff and water importation; and the need for financial liability and accountability by upstream governmental entities for damages caused by increased stormwater flows and by the introduction of non-native flows into rivers and streams.

3. Reuse.

Section 6.3.2 of the Plan includes helpful information about opportunities to meet future demands through reuse of existing and future reusable water supplies. Recent developments have demonstrated that technology exists to more efficiently reuse available supplies. Experience in other states, such as California, as well as Denver Water's own potable reuse demonstration project in the 1980s, establishes the technical feasibility of direct potable reuse ("DPR"). Colorado law is generally supportive of reuse of imported and developed water supplies, although there is certainly room for additional legislative and regulatory flexibility, as noted in the Plan.

Pueblo County supports the recommendations in the Plan that Colorado should work through and approve a proposed DPR project and that the CWCB develop a program to educate the public, elected officials, and water utilities about the benefits and safety of DPR. Pueblo County also supports the potential IBCC action to develop a statewide agreement tying reuse to new supply development and agricultural transfers, as well as the principle that entities must first reuse all legally available reusable water supplies to the maximum extent possible before further development.

The benefits to Pueblo County of promoting reuse are two-fold. First, municipal reuse would reduce the need for dry-up of agricultural lands and transfers of agricultural water rights to municipal use. Second, reuse in El Paso County would reduce and control damaging flows in Fountain Creek through Pueblo County.

Thank you for the opportunity to submit these comments. We look forward to working with you on future revisions and implementation of Colorado's Water Plan.

Sincerely,

Liane "Buffie" McFadyen
Chair, Pueblo County Board of County Commissioners
Commissioner, District 2

PUEBLO COUNTY COURTHOUSE
215 W. 10TH ST., PUEBLO, CO 81003-2992
(719) 583-6000
FAX: (719) 583-6549
www.county.pueblo.org

Terry Hart
Commissioner, District 1

Sal Pace
Chair Pro Tem, Commissioner, District 3

cc: James Eklund (James.Eklund@state.co.us)
Rebecca Mitchell (rebecca.mitchell@state.co.us)
Jacob Bornstein (jacob.bornstein@state.co.us)
Kate McIntire (Kate.mcintire@state.co.us)

PUEBLO COUNTY COURTHOUSE
215 W. 10TH ST., PUEBLO, CO 81003-2992
(719) 583-6000
FAX: (719) 583-6549
www.county.pueblo.org

PUBLIC INPUT ITEM 165

Aurora Water
City of Aurora
Water Resources
15151 E. Alameda Parkway, Ste. 3600
Aurora, Colorado 80012
303.739.7370
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September 17, 2015

Mr. John Stulp
Ms. Rebecca Mitchell
Mr. Jacob Bornstein
Colorado Water Conservation Board
313 Sherman Street, Room 720
Denver, CO 80203

RE: Aurora Water's Comments on 07-02-15 Draft Colorado's Water Plan

Dear John, Rebecca, and Jacob:

Aurora Water is the third largest water utility in the State of Colorado, serving a population of more than 348,000. Our mission is to enhance and protect the quality of life for Aurora citizens by providing safe, dependable and sustainable water, sewer, and storm water services, today and into the future. We have been a strong supporter of the Colorado Water Plan (Plan) effort and our staff have actively participated in the HB 1177 Roundtable process, with memberships and participation on the IBCC and Metro, South Platte, Arkansas, and Colorado River Basin roundtables since their inception.

We have submitted comments regarding prior drafts of the Plan, including during the fall of 2014 regarding pre-draft sections and on April 29, 2015 regarding the December 10, 2014 initial draft of the Plan. Many of those comments were addressed in the December 10, 2014 and July 2, 2015 drafts. We have also provided comments and recommendations on the Plan during various discussions that have taken place since the latest July 2015 draft at monthly Metro and South Platte Basin Roundtable meetings and at the July 13, 2015 and August 25, 2015 IBCC meetings. At the meetings, changes to various sections of the Plan were discussed and agreed upon. While Aurora supports these changes, our comments provided below are targeted at the July 2, 2015 Draft Plan as that version is the official draft currently out for public review. Noted below are where we agree with the suggested changes and Aurora will continue to support the Plan provided these changes remain.

Aurora is a member of several organizations that are also submitting comments on the latest draft Plan, including the South Platte Basin and Metro Roundtables (BRTs), the Front Range Water Council (FRWC), and the Metro Mayors Caucus (MMC). We agree with the comments submitted by these groups, and have generally avoided replicating those comments to maintain brevity. Where appropriate, however, we have referred to those comments or restated them to include additional detail or provide emphasis to Aurora's position.

Aurora appreciates the State's willingness to address Aurora's concerns throughout the development of the Plan. However, there are some sections of the Plan that we believe require additional attention. You will note that some of our comments below are made in the spirit of adding clarity to the document – we have found that as the Plan is being more widely read by those that have not been part of the planning process, terminology and concepts that we tend to take for granted can be confusing to those new to the discussion. It is our sincere hope that these comments will improve readability and add focus to the Plan. Note that some of the following comments reiterate statements made in our earlier comment submittals where we believe additional changes to the Plan are still warranted. Where specific text changes are being recommended, we have identified the original Plan text in *italics*, suggested deletions as ~~strikeout~~, and additions in red.

Chapter 1: Introduction

It was with great concern when we read the text on the first and second pages of the Introduction that have been added since the last draft Plan. This concern begins with the sentence before the bullets, where it states that "*The trade-offs in addressing this gap, if we do nothing or if we continue this status quo, are unacceptable to most of us*" and continues with the bullet list that follows. This text is new and sets the tone for the rest of the Plan, portraying a decidedly anti-City and anti-urban area perspective that is in direct conflict with the first value stated in the Governor's Executive Order of "*A productive economy that supports vibrant and sustainable cities…*"

We request that the CWCB carefully consider rewording, and possibly eliminating, this text. Although specific comments and recommendations are provided by the letter submitted by the BRTs and MMC, they are restated herein to express our support of those suggestions. First, we request that the text prior the bullets containing "…*are unacceptable to most of us*" be replaced with "are unsustainable". Regarding the bullets at the bottom of page 1 and top of page 2, we recommend these changes (original Plan text shown in *italics*):

- *A blind hope that basin economies, watersheds, and ecosystems can withstand more water diversions* (page 1, second bullet).

  This statement implies that the good planning that cities and water suppliers have used to plan for water supply projects is based on "*blind hope*" instead of careful analysis. It also implies that there should not be any more water diversions, because economies, watersheds and ecosystems cannot withstand such diversions. In fact, new diversions and storage will be needed to develop collaborative, regional projects. This bullet should be deleted.

- *Populations striving to recreate the water-intensive landscapes of the Eastern U.S. instead of adopting a Western water ethic* (page 1, fourth bullet).

  This statement implies that it is wrong or "*unacceptable*" for the residents of the urban areas to value the area's environment. The Plan itself recognizes "*the vital importance of urban landscape and its benefits, including improved air quality, surface water quality and groundwater quality, increased property values, aesthetics, and general quality of life*" (page 82), and that "*healthy urban landscapes enhance the livability of a city or town and are a crucial asset for urban populations*" (page 86), but doesn't reconcile that information with the introductory statement that this urban landscape is "*unacceptable to most of us*". The majority of

the state's population (on both sides of the continental divide) live in and enjoy urban environments, and such environments are a significant driver for the vibrant, productive economies that have developed in and around urban areas. This bullet should be modified – suggested language could be "Continued use of high water consumption plantings in municipal and industrial landscaping and agriculture, instead of landscape and crop selection more appropriate to our semi-arid climate."

- *Water laws and administration that are out of touch with our changing needs* (page 2, second bullet) and
- *Dogmatic views of water law that position the State of Colorado as the sole obstacle to changes in water use* (page 2, third bullet).

We contend that Colorado's Appropriation Doctrine has worked well for 150 years to protect the property rights of water rights owners, and that incremental adjustments have also worked well to accommodate changing needs. Furthermore, we are apprehensive of any changes in water law that diminishes the protections of water right holders. These two bullets should be deleted.

Chapter 2: Our Legal and Institutional Setting

The anti-urban tone set in the introduction of the plan is propagated again in Chapter 2. In several sentences throughout the sub-section, the word "*burden*" has been used to replace the word "impact" when discussing new development. Although this is a small change, the chosen language encourages readers to view development and growth in a negative light. The Local Government Land Use Control Enabling Act uses the word "impact", and it is more appropriate to use in Chapter 2 and should replace the word "*burden*".

Chapter 3: Overview of Each Basin

Basin Descriptions and Challenges – South Platte River Basin

The last bullet of South Platte Challenges (page 45) should be separated into two bullet points. The concepts discussed in the final bullet, as it stands, are uniquely important and deserve to be called-out independently.

- *The urban environment is an important component of the quality of life for many South Platte Basin residents. Judgments about the value of the urban environment, including the need to provide water for irrigated landscape, make discussions about water supply development needs all the more difficult.*
- *The environmental and recreational features within the basin, including amenities such as mountain streams and rivers used for fishing and rafting, city green ways, flatwater reservoirs, wetlands and open space, are all extremely important to Colorado's tourism economy and quality of life for its residents.*

The topic of urban environments is particularly complex. At this point in the Plan, readers may not fully understand what an urban environment is and the vital benefits it provides: increased economic value,

air cooling, improvements in air quality and water quality, in addition to aesthetic value. We suggest the first bullet above be modified to state:

- *The urban environment is an important component of the quality of life for many South Platte Basin residents. Judgments about the value of the urban environment, including both the need to provide water for irrigated landscape and the vital benefits that landscape provides to citizens and the environment, make discussions about water supply development needs all the more difficult.*

Basin Implementation Plan Themes – South Platte Basin (including Metro)

The discussion of the four legs of the stool (page 54) should include the South Platte's discussion of storage and environmental & recreational needs being integral to the four legs of the stool. The South Platte Basin Implementation Plan (BIP) emphasizes the interdependency of the four legs of the stool, along with both storage and environmental & recreational components. These critical features are also included in the South Platte BIP's 11 Plan Elements. This paragraph should state those concepts as they play a critical role in the South Platte BIP's plan and public message.

Chapter 5: Water Demands

State of Knowledge in Water Conservation

There is only one sentence in this section that acknowledged the significant achievements in the State in reducing demands through existing conservation programs. While such information would more appropriately appear in Chapter 5, it is discussed in Section 6.3 and reference should be made to Section 6.3 where details are provided (see comment below).

Mixed conservation terminology results in confusing discussions in this section, as well as other sections of the report. Throughout the Plan, the term "conservation" is used interchangeably with "efficiency" when discussing municipal water conservation. Also, the terms strategy, level, and goal are often used interchangeably when discussing low, medium, or high water conservation levels. Terminology should be consistent, and we recommend that "conservation" and "level" always be used when discussing water conservation to avoid confusion. In addition, clear definitions of "active" and "passive" conservation, and "low", "medium", and "high", and the recently included "aspirational stretch" conservation levels should be provided as these terms are used throughout the report.

It is often unclear throughout the Plan if achievements and goal levels being discussed are active, passive, or total values. Which level is being discussed should be clearly stated at all times. We are not identifying every location where consistent terminology is needed, but examples in this section include:

- Page 81, last paragraph – "*Using the best practices as a basis, the Statewide Water Supply Initiative (SWSI) 2010 estimated low, medium, and high ~~strategies~~ levels for active water conservation savings.*"

- Page 82, first paragraph, last sentence – "*…ensure new customers join the water system at a high level of ~~efficiency~~* conservation."

- Page 83, Table 5-2 – Recommend using "Conservation" instead of "~~Strategies~~" in the three column headings.

- Page 84, last paragraph – Quoted numbers should be consistent, and presented as rounded or not-rounded, but not both throughout the Plan. We believe the first sentence is referring to the 154,000 acre-feet of passive savings identified elsewhere. The sentence should therefore be revised to read "…*another ~~150,000~~* 154,000 *acre-feet of* passive *savings will likely accrue by 2050*…" If the value is in reference to something else, it should be identified appropriately.

Page 82, last full paragraph – the sentence referring to an "*aspirational goal*" would be clearer to identify this as an "aspirational stretch goal".

On page 83, the Plan states that, "*Initial estimates by the roundtables indicated that between 50 and 60 percent of conserved water could be used to meet future growth*." The South Platte BIP estimates 50 percent of active conservation savings between 2008-2050 (Metro) and 2010-2050 (South Platte) going towards meeting the gap. This is in-line with Colorado's Water Plan as long as the correct timeframe is referenced. Of additional importance is acknowledging past conservation accomplishments. This section does not discuss conservation-to-date or a baseline from which to analyze future conservation achievements.

Chapter 6: Water Supply Management for the Future

Section 6.1 Scenario Planning & Developing an Adaptive Water Strategy

Developing an Adaptive Water-Management Plan

Page 102, first line – The term "*unacceptable*" has been added again to the Plan language. As per our comments above on the Introduction, this term should be deleted.

Page 102, third bullet – This has changed from *medium* to *medium-high* conservation strategies, and a value of 200,000 acre-feet (one-half of these savings) is included to meet future M&I needs. We believe this is in reference to the aspirational stretch goal of 400,000 acre-feet, but that should be clearly stated. Note that comments below (Section 6.3 and Chapter 10) include our recommendation that the aspirational stretch goal not be quantified at this time due to the uncertainty surrounding its validity, and that at the very least it be identified as a range and not a set value until it can be better defined.

Section 6.2 Meeting Colorado's Water Gaps

Goals and Measurable Outcomes by Basin

Page 107 – The paragraph titled "***Meet Colorado's Municipal Water Needs through Conservation and Identified Projects and Methods***" should more accurately be titled "***Meet Colorado's Municipal Water Needs through Conservation, ~~and~~ Identified Projects and Methods, Alternative Agricultural Transfer Methods, and Transmountain Diversions***". The paragraph text should note that the South Platte BIP utilizes some degree of ATMs and supports the IBCC Conceptual Framework to guide negotiations for a future TMD.

Section 6.3 Conservation and Reuse

The Plan refers to many benefits of water conservation, including improved water quality and aquatic habitat, sustainability, and cost savings (page 158-159), however, this section fails to mention the many unknowns and challenges associated with conservation, such as the affects to downstream users and the potential to relocate the water supply gap to another area of the basin. These impacts could be significant and should be noted in the Plan.

There has been much discussion (and confusion) regarding water conservation in the latest version of the Plan. We believe that much of this confusion results from inconsistencies in values used (some rounded and some not rounded), terminology (unclear if active, passive, or total conservation levels apply), and whether or not the amounts identified are total savings or the amounts being applied to the M&I gap. Our comments below identify the values, terminology, and application of savings we believe are those intended by the work of the IBCC and Water Conservation Subcommittee.

The stated active M&I conservation target in the Plan is 170,000 acre-feet (page 163), as defined in the IBCC No and Low Regrets Action Plan. As noted on page 164, all of low (160,200 acre-feet), or half of medium (165,600 acre-feet) active conservation levels would need to be achieved. It is our understanding these values are the origin of the rounded 170,000 acre-feet active conservation savings target. Since other values in the Plan are generally expressed to the nearest 1,000 acre-feet, we have assumed the active savings target should be more clearly stated as 166,000 acre-feet.

Aurora noted in our prior comments on the December 2014 draft Plan that the 2050 active conservation savings projected in the South Platte BIP only total 53,000 acre-feet (based on one-half of the total active basin savings of 106,000 acre-feet being applied to the M&I gap), and it was our understanding that the Plan goal of 166,000 acre-feet was the amount to be applied to the M&I gap. The total M&I demand in these basins represents 63 percent of the statewide M&I demand, and it is not likely that the State could achieve an overall savings of 166,000 acre-feet (i.e., the remaining 37% of the State would need to achieve the remaining 113,000 acre-feet in savings). However, <u>if the conservation target represents the total active conservation savings to be achieved without identifying the portion to be applied to the M&I gap</u>, the South Platte and Metro basins would contribute 106,000 acre-feet to that goal, the remainder of the State would only need to achieve 60,000 acre-feet in additional savings, and the Plan target appears to be reasonable.

Another concept introduced into the July 2015 draft Plan is that of a stretch conservation goal. As we have noted in a number of discussions on this concept, any mention of a stretch conservation goal needs to be clearly identified as an <u>aspirational</u> stretch goal. This goal, first and foremost, should not be viewed as a mandatory achievement or viewed as indicative of State policy before any project (IPP, new supply, ATM, or otherwise) is endorsed by the State or permitted by any local or federal agency. By its very nature, a stretch goal is aspirational and is not achievable under current policies and with existing technology and programs. We request that this be clearly stated in any discussion of the stretch goal.

A stretch goal of 400,000 acre-feet is identified in the July 2015 draft Plan. While not clear in the Plan, it is our understanding from conversations with CWCB staff and discussion at IBCC and BRT meeting that this goal is a total goal, comprised of 154,000 acre-feet of passive conservation savings, 166,000

acre-feet of Low and No Regrets active conservation savings, and an additional 80,000 acre-feet of "aspirational stretch" savings (note that the Plan states that the additional amount required is 60,000 acre-feet, which appears to be incorrect). The passive savings are expected to be applied to the M&I gap, but the amount of the active and aspirational stretch savings to be applied to the gap has not been defined, though BIP recommendations range from 50 to 60 percent.

Attempts have been made to substantiate if a 400,000 acre-feet goal is potentially achievable. Calculations of total projected active savings in each basin have been made based on water provider Conservation Plans on file with the State. This calculation indicated a potential active conservation level of 279,000 acre-feet by 2050, which when combined with passive conservation would results in nearly 433,000 acre-feet of total conservation. However, the values used differ significantly from the numbers forecasted in the South Platte and Metro BIP. Aurora staff have met with CWCB staff to review the calculations related to Aurora and found that active conservation levels for Aurora were misinterpreted by the CWCB and overestimated in this calculation. We have also discussed with CWCB staff the methodologies used in this calculation, and both Aurora and the CWCB staff generally agree that other methods used to estimate future conservation levels could result in significantly lower values. While this does not necessarily invalidate the aspirational stretch goal, it was agreed that additional work is needed to validate the numbers (as discussed below and recommended in our Chapter 10 comments), and given the incorrect interpretation of Aurora's values, the values for all water conservation plans used in the analysis should be validated with each provider.

Rather than a hard stretch number, and given the uncertainty of the stretch goal calculation, it would be more useful to either not quantify the goal at this time or to define potential savings in a range (e.g., 320,000 to 400,000 acre-feet), with the understanding that giving the impression that while 400,000 acre-foot may be achievable, it is a stretch and the lower number is more realistic. This range is where water providers as a whole can then set their goals of savings. Further discussion by a third-party group, such as the Water Conservation Technical Advisory Group (WCTAG) should be considered to determine methodologies, terminology and the general message given when using savings numbers. These discussions can lead to a transparent process that water providers and the State can agree upon and use when checking numbers in future forecasts. This recommendation is included in our comments in the Critical Action Plan below.

Per our comments on Chapter 1 regarding the recognition in the Plan of the vital importance of urban landscape and its benefits and that healthy urban landscapes enhance the livability of a city or town and are a crucial asset for urban populations, any development of aspirational stretch conservation goals must properly consider both the technical and legal practicality of any goals and the impact such goals have on urban landscapes and their benefits.

The language on page 165 in the Accountability bullet was discussed at the August 25, 2015 IBCC meeting, and it was agreed that some changes were necessary to be acceptable to the group, as follows:

- ***Accountability****: For the goal to be successful, water providers will be encouraged to do comprehensive integrated water resource planning, geared toward implementing the best practices at the high~~er~~ customer participation levels*, as defined in SWSI. *This* planning *will be* one of the components that shall be considered ~~*part of the necessary requirements*~~ *to achieve state endorsement of projects~~,~~ and financial assistance.* This planning allows for flexibility by

> the local water provider to do what is technically, economically, and legally practical for their system as not every conservation practice is appropriate for every community.

Note that the paragraph following the Implementation bullets on page 165 should be deleted as it is now repetitive, and partially in conflict with the above revisions. Aurora agrees with these changes, and requests that they be included in the final Plan.

While the July 2, 2015 draft of the Plan includes a stretch goal for conservation, it does not include a similar stretch goal for any of the other solutions put forward in the Plan. The Plan is meant to be an "all of the above" strategy where all solutions – conservation and reuse, IPPs, ATMs, and development of new Colorado River supplies, as well as storage – are needed. One single solution is not a silver bullet, and Colorado cannot overly rely on one solution. Including a stretch goal for only conservation is not balanced and is counter to the "all of the above" approach. The Metro and South Platte BRTs do not believe that it is the intent of the Plan to overly rely on conservation as the solution to Colorado's water challenges. They recommend that the Plan outline the development of complimentary stretch goals for storage, reuse, IPP success, ATMs, and development of new Colorado River supplies. A process for the development of these aspirational goals should be provided in Chapter 10. Aurora agrees with this recommendation and supports the development of complimentary stretch goals.

Section 6.3 fails to mention the amount of conservation savings basins have already applied to the water supply gap and how they intend to apply future savings toward the gap. It would be appropriate to acknowledge what entities across the State have accomplished to date. We believe these type of examples would be very useful to readers and help them gain a better understanding of a complex topic, especially if the examples were quantitative. For example, from 1997 to 2014, Aurora's population has increased by 68,000 (25%), while the gallons per person per day (gpcd) deliveries have decreased by 56 gpcd (32%), resulting in a 21,000 acre-feet per year savings in 2014 compared to pre-conservation levels![1]

We encourage the CWCB to provide a sampling of similar quantitative saving from various providers and basins across the state. This information should be available in the water conservation plans submitted to the State or should be fairly easily provided by other providers.

Section 6.5 Municipal, industrial, & agricultural infrastructure projects & methods

The introduction to this section needs to also include new transmountain diversion (TMDs) as an M&I project and method. TMDs are identified in the South Platte BIP as one of the necessary components for meeting the M&I gap, as noted later in this section on page 228. The *Draft IBCC Conceptual Framework* section of Chapter 8 can be referenced for the details of the TMD discussion and not repeated here, but the casual reader of the Plan would have no indication that new TMDs remain part of the conversation in Colorado. Suggested language could include:

> Under the four legs of the stool concept developed by the IBCC and which is noted in the IBCC No and Low Regrets Action Plan and in the South Platte BIP, new supply (i.e., new TMDs) has long been recognized as one of the options for addressing the State's long-term needs. Consideration of the ability to use and preserve Colorado's entitlement under the Colorado River

[1] Values based on 3-year rolling averages of City population and water use from 1997 to 2014.

Compact could be pursued as other strategies are pursued to meet water demands. Investigating, preserving, and developing Colorado's entitlement to Colorado River supplies is beneficial to the State's economic, social, political and environmental future. This may involve large state-level water projects, or small level projects, each with comprehensive West Slope water supply and environmental and recreational components. The IBCC Conceptual Framework (as discussed in Chapter 8 of the draft Plan) provides the framework whereby new Colorado River Basin supply options could be investigated and potentially developed.

Section 6.6 Environmental & recreational projects & methods

Our comments submitted on the prior drafts of the Plan recognized that environmental needs and projects should be subject to the same conservation focus as M&I uses. We believe it is important to again make the point that it is the charge of all in the State to put Colorado's precious water supplies to beneficial use in the most efficient manner possible. M&I use has long been held to a high standard in achieving that goal, with no allowance for water waste or allowance of any impact to other water rights. We all should expect that the same level of scrutiny and conservation requirements be put to all uses, whether for consumptive M&I, agriculture, or nonconsumptive uses such as Recreational In-Channel Diversions (RICDs). Other environmental flows, including flushing flows, necessary to maintain habitat should also be closely scrutinized to determine if such flows are the minimum necessary to achieve the intended beneficial use. This recognition remains absent from the draft Plan.

As an example, the CWCB could develop technical guidance for RICD claims that:

- defines the information needed to define a reasonable recreational experience, including the costs and benefits associated with an RICD;
- demonstrates that the proposed flow claim and RICD design represents the most efficient means to apply the minimum amount of water necessary to achieve the claimed beneficial use;
- demonstrates that such reasonable recreational experience can be achieved; and
- defines the engineering criteria and level of analysis and design needed to properly evaluate a proposed RICD.

This is included as a recommendation for the Critical Action Plan in our Chapter 10 comments below.

Chapter 8: Interbasin Projects and Agreements

The concept of a Conceptual Framework (originally identified as an Agreement) to define principles to guide future negotiations between proponents of a new TMD and those communities who may be affected by a new TMD been a subject of ongoing discussion at both the IBCC and at individual BRT meetings throughout the State. The latest version of this Conceptual Framework, revised and approved at the August 25, 2015 meeting of the IBCC, has been approved by the Metro BRT at its September 9, 2015 meeting. Aurora has been a participant in these discussions, and we also support the August 25, 2015 draft of the Conceptual Framework. To be clear regarding the language that we support, attached to this letter is the version provided by the CWCB following the August 25th IBCC meeting, and any

changes (other than minor typographical edits) will necessarily require the review and approval of the IBCC, BRTs, and Aurora to retain our support.

Chapter 9: Alignment of State Resources and Policies

Section 9.2 Economics & funding

Aurora appreciates the efforts of CWCB staff and IBCC funding committee in the identification of a number of potential funding options. Though many ideas are offered, the Plan should have realistic expectations regarding what revenue sources can be made available, especially where voter approval is required. The Plan also needs to acknowledge that many water supply entities have raised their rates a significant amount, with other increase on the horizon, in order to construct necessary water supply projects such as is the case with Aurora for its Prairie Waters Project. The State should be aware that some of the funding options that involve fees and taxes paid by all residents, including our ratepayers, could be perceived by our ratepayers who are already funding Prairie Waters as a request that they now pay for improvements to the systems of others or for in-stream benefits that do not benefit them directly. Education and outreach will be key in explaining to the public how "new" revenues will cover the costs of completing important environmental/watershed protection tasks of direct benefit to them, as well as recreational amenities that are important to the state as a whole, but that are currently underfunded.

Finally, Chapter 10 cannot simply identify ways to raise money. The revenue options must be coupled with at least some explanation of "why" the money is needed, what specific projects are included in the estimated multi-billion dollar demand figure, and what projects or types of projects would specifically be funded if one or more of the revenue approaches were adopted.

Section 9.4 Framework for a More Efficient Permitting Process

Comments submitted by the FRWC offer a number of viewpoints and suggestions that Aurora fully supports, and those are not repeated here. However, we do especially want to emphasize that State ownership in a project development and operation, rather than just State endorsement, can be a catalyst in not only efficiently completing permitting requirements, but also ensure that environmental and recreational project components of statewide benefits reflect the State's investment.

1041 Local Permits

In Aurora's April 28, 2015 comments, we supported the permitting solutions proposed by Northern Colorado Water Conservancy District. In those comments, we supported the designation of a task force to evaluate the local 1041 permitting process to (i) identify appropriate and clear criteria for application to water projects; (ii) ensure the advancement of state interests in the beneficial use of state water resources; and (iii) identify how to more closely coordinate with the federal and State permitting requirements, while honoring the authority of 1041 permitting local governments. In addition, we believe care needs to be taken to ensure permitting requirements are reasonable and not cost prohibitive. Our position on this issue remains unchanged.

Past and Existing Colorado Efforts

Aurora Water had previously suggested a process modeled on the Colorado's Joint Review Process (JRP) based on the efforts of the Colorado Department of Natural Resources to develop a streamlined method of evaluating projects and consolidating schedules. The regulatory landscape is even more daunting now than it was in the late 1970's and early 1980's, and we urge the State consider the JRP's applicability. The introduction from the Colorado JRP Manual (1980) states the problems eloquently:

> *The Colorado Joint Review Process for Major Energy and Mineral Resource Development Projects (JRP) is an intergovernmental review process that coordinates government's review of major energy and mineral resource development projects. The JRP provides structure and certainty to an otherwise fragmented and unstable set of requirements, procedures, time frames, and inter-agency relationships.*
>
> *The JRP is a management system designed to coordinate regulatory and administrative reviews conducted by the three levels of government, thus expediting those review processes and improving the quality of project planning and review. It provides the public and industry with increased opportunity to become involved with government in the review of a project.*

Colorado's JRP was designed to be a flexible process which could be adapted to many different situations. Per the JPR Manual, the process can and should be modified to accommodate the unique characteristics of individual projects selected for joint review. Such modifications could include eliminating unnecessary coordination steps, consolidating various steps, and changing time frames not governed by statute, regulation, or agency policy. JRP procedures could be used (with modification) by the federal or local levels of government to coordinate regulatory decision-making, administrative evaluations (e.g., EIS preparation), or planning programs. Individual departments or agencies could apply various JRP concepts and procedures to specific decisions, reviews, or planning processes.

Aurora Water urges the CWCB to review the Colorado JRP Manual in its entirety for its applicability to the "fragmented and unstable set of requirements, procedures, time frames, and inter-agency relationships" that have prevented reasonable development of our water resource projects over the last three decades (we can provide a copy at your request).

Potential Conceptual Framework for State of Colorado Support of a Project

We support most of the draft conceptual framework for a project to receive State endorsement. As stated previously, we believe a CJRP-like collaboration would be very useful in guiding this process. Regardless of the process used, we feel the following areas should be addressed during the evaluation of the framework.

- The upfront development of a work plan that will lead to a decision document will be critical. The requirements for all Federal, State and Local permits should be included in the plan along with a schedule that includes all deadlines.

- Schedules defined in the work plan should be binding. If permitting agencies cannot meet the deadlines defined in the work plan, the project should receive automatic approval. Without a mandatory timeline, state agencies could become a drag on the system.

- In the proposed flowchart of State Involvement in Federal 404 Permitting Process (Figure 9.4-2), we suggest:
    - There should be parallel paths for Federal, State and Local Permitting.
    - The DEIS identification of preferred alternatives and detailed mitigation work be moved up in the process closer to the "Purpose and Need."
    - Based on this flowchart, it is unclear if the public would be allowed to make comments to CDPHE and DNR regarding their recommendations to the Governor's Office. We believe their recommendations should be based on technical information and not influenced by direct public comment.
    - The last stage of the flowchart is the issuance of the 404 Permit. Aurora believes all other permits should be issued at this time as well.

Section 9.5 Outreach, Education, and Public Engagement

Colorado's Water Plan website (page 388) – We recommend that the Plan's website remain the repository of all drafts of the Plan and comments submitted (with the State's responses), as well as the BRT BIPs. The Plan is going to progress through 5 to 10 year update cycles, and it is important that a record of the evolution of the Plan be maintained for future authors and reviewers to learn from and to understand the basis of decisions made as the Plan was developed.

Chapter 10: Critical Action Plan

Aurora concurs with the comments and recommendations provided by the South Platte and Metro BRTs. In addition, please note the following additional comments:

Section 10.3 Strategic Goals and Actions

- **Legislation**: The BRTs should also be included in the group that are asked to provide input and feedback to the legislative discussion.

For the critical actions presented in this section, additional comments are provided below with reference to the action number defined in the Plan:

Ia. Align Existing Funding

- Action 6 – The potential for the State to become a project partner should also be investigated.

IIIa. Increase Municipal Conservation and Efficiency

- Modify description to "Aspire to r~~R~~*educe Colorado's projected 2050 municipal water demands by* a stretch goal of 320,000 to *400,000 acre-feet through active conservation, …"*

- Action 1 – Modify this language to be consistent with the revised ***Accountability*** language in Section 6.3.

- Action 4 – Add to or replace language with "Engage the Water Conservation Technical Advisory Group (WCTAG) to determine methodologies, terminology and the general message given when using savings numbers, leading to a transparent process that water providers and the State can agree upon and use when checking numbers in future forecasts."

IVa. Maintain Agricultural Viability and Efficiency

- Action 2 – Aurora supports agricultural sustainability state-wide, but does not support this action and believe it should be edited or removed. The action, as it is described in more detail on page 241, states that "*a framework for the evaluation of agricultural transfers will be developed from a technical and legal perspective before consideration of requiring such an evaluation*." This description is vague and suggests a protracted process that could impinge on a water owner's rights. A framework will not reduce agricultural transfers, but would rather make the process more burdensome for both Seller and Buyer. In order to successfully reduce agricultural transfers, other Plan elements must be more practical and achievable.

Vb. Enhance Environmental and Recreational Economic Values

- Add an Action for the CWCB to develop technical guidance for RICD claims that defines the information needed to define a reasonable recreational experience, including the costs and benefits associated with an RICD; demonstrates that the proposed flow claim and RICD design represents the most efficient means to apply the minimum amount of water necessary to achieve the claimed beneficial use; demonstrates that such reasonable recreational experience can be achieved; and defines the engineering criteria and level of analysis and design needed to properly evaluate a proposed RICD, as recommended in our Section 6.6 comments above.

Thank you for this opportunity to comment. Aurora Water hopes that you find this input of value for your discussions and development of the Final Colorado Water Plan. Please contact me if you would like to discuss these comments in additional detail.

Sincerely,

Joseph S. Stibrich, P.E.
Water Resources Policy Manager, Aurora Water

Attachments
August 25, 2015 IBCC Discussion Document for a Conceptual Framework

Interbasin Compact Committee
Conceptual Framework

In preparation for *Colorado's Water Plan*, the Basin Roundtables drafted Basin Implementation Plans. Front Range Roundtables declared a need for a balanced program to preserve options for future development of Colorado River System water, while West Slope Roundtables expressed great concern regarding additional development of Colorado System water involving a new[1] transmountain diversion project (TMD). This document represents an IBCC consensus to address both Front Range and West Slope concerns about a new TMD.

The *IBCC Conceptual Framework* (Framework) sets out seven principles to guide future negotiations between proponent(s) of a new TMD and those communities who may be affected were it built. The Framework reflects areas of statewide concern. In generating it, the IBCC's diverse stakeholders thoroughly explored the difficult issues that would surround a new TMD. As such, this framework may help accelerate future negotiations. However, the Framework cannot take the place of specific negotiations and agreements.

The intent of the Conceptual Framework is to represent the evolving concepts that need to be addressed in the context of a new TMD as well as the progress made to date in addressing those concepts. The Conceptual Framework refers to several topics that are not exclusively linked to a new TMD, but are related to Colorado's water future. These include conservation, storage, agricultural transfers, alternative transfer methods, environmental resiliency, a collaborative program to address Colorado River system shortages, already identified projects and processes (IPPs), additional Western Slope uses, and other topics The Conceptual Framework, like the rest of Colorado's Water Plan, is a living document and is an integrated component of the plan. Many of these topics are further discussed in more detail in other sections of Colorado's Water Plan.

The IBCC acknowledges that overdevelopment of Colorado River System water is a serious risk that could result in a Colorado River Compact deficit[1]. All of Colorado's water planning efforts must recognize that risk. The Framework provides a way to think about how entities in Colorado might develop a future increment of Colorado River System water. The Framework states the realities and issues proponents for a new TMD should expect to address.

Principle 1: East Slope water providers are not looking for firm yield from a new[2] TMD and the project proponent would accept hydrologic risk for that project.

Water providers define firm yield differently, but the concept usually represents an estimate of the amount of water a system makes available during a representative hydrologic cycle. A proponent of a new TMD would not seek a firm yield from the Colorado River System, but instead would develop a project that could provide firm yield if operated in conjunction with East Slope sources of supply, as described in Principle 2.

[1] A Colorado River Compact deficit occurs when flows at Lee Ferry fall below the obligation of the Upper Division States contained in Article III of the Colorado River Compact.
[2] A "new" TMD means a transmountain diversion project that is not an identified project or process (IPP) in SWSI 2010.

Accepting hydrologic risk means that a new TMD would be administered under Colorado's priority system, diverting water only when it is physically and legally available in priority in the basin of origin, and in accordance with the triggers described in Principle 3. Thus, a new TMD would avoid unacceptably increasing either the risk of a Compact deficit or the burden on existing uses in a demand management program, such as is described in Principle 4.

Principle 2: A new TMD would be used conjunctively with East Slope supplies, such as interruptible supply agreements, Denver Basin Aquifer resources, carry-over storage, terminal storage, drought restriction savings, and other non-West Slope water sources.

It is important for East Slope parties to demonstrate to the West Slope that structures, agreements and frameworks are or will be in place for East Slope backup water supplies during times when a new TMD would not be able to divert Colorado River System water. Interruptible supply agreements, Denver Basin Aquifer resources, carry-over and terminal storage, and drought restriction savings are options for backup water supplies that East Slope entities would use during years when a new TMD would not be able to divert Colorado River System water. Any entity interested in participating in a new TMD would prepare and share a detailed plan for firming the yield of a new TMD in dry years using some or all of these options. The firming plans should include steps to replace water not available from the new TMD, as well as sufficient supplies to meet the entity's demands, including those that could be met with reuse of a new TMD's water. Each entity would tailor its firming plan to its system's unique strengths and constraints. The tools listed above are options, not requirements.

Principle 3: In order to manage when a new TMD would be able to divert, triggers are needed.

Triggers are operating parameters that determine when and how much water a potential new TMD could divert, based upon predetermined conditions within the Colorado River System. Such parameters include, but are not limited to, specific storage elevation levels in one or more Colorado River System reservoirs, projected inflows at key Colorado River System locations, actual reservoir inflows over specific defined periods, snowpack levels, predictive models - or combinations of these – which would trigger certain actions and prevent others.

Triggers are needed to insure that diversions by a new TMD do not unacceptably increase the risk to the yield of existing uses of a Compact deficit, or increase the amount of water existing users would have to provide through a demand management program to maintain storage levels in Lake Powell.

Triggers would need to be adaptable as conditions within the Colorado River System change over time, and legally enforceable by appropriate authorities. Triggers may also need to be modified to reflect the outcome of continuing negotiations among Colorado, other Colorado River Basin States, the federal government, and Mexico regarding the continuation of the 2007 Interim Shortage Guidelines, 1944 Mexican Water Treaty and related Minutes, and other Colorado River System issues. Colorado would modify the triggers over time as these agreements will provide the ultimate parameters within which a new TMD would need to operate.

Principle 4: A collaborative program that protects against involuntary curtailment is needed for existing uses and some reasonable increment of future development in the Colorado River System, but it will not cover a new TMD.

A collaborative program that protects existing uses and an increment of future development is a necessary element of Colorado's water planning, regardless of whether a new TMD is developed. The Framework includes this principle to make clear that a collaborative program would not protect a new TMD.

The collaborative program should provide a programmatic approach to managing Upper Division consumptive uses, thus avoiding a Compact deficit and insuring that system reservoir storage remains above critical levels, such as the minimum storage level necessary to produce hydroelectric power reliably at Glen Canyon Dam (minimum power pool). A goal of the collaborative program is that it would be voluntary and compensated, like a water bank, to protect Colorado River system water users, projects and flows. Such protection would NOT cover uses associated with a new TMD.

A second goal of the collaborative program should be that it protects the yield of the water supply systems in place in the Colorado River Basin from involuntary curtailment. To achieve this goal, the program would need to expand to accommodate future West Slope growth and growth of existing water supply systems, the pace of which is not now known. Protecting additional consumptive uses will increase the program's scope and challenges. Some basins, such as the less-developed Southwest and Yampa/White/Green, anticipate the need for future development and will seek terms to accommodate it in the collaborative program. Regardless of when a use develops, the program would strive to protect uses at the time of shortage, except a new TMD. By adapting to accommodate increased uses at any given time, the program should not lead to a rush to develop water rights. Section 9.1 of Colorado's Water Plan provides additional discussion of the collaborative program.

The collaborative program will develop in concert with intra- and interstate water policies. The IBCC and roundtables can provide an important forum for sharing the work of on-going interstate negotiations, scoping technical analyses, and identifying issues of concern at the stakeholder level, as well as providing input to the CWCB as it manages and conducts the technical, legal, economic, and other studies necessary for implementation.

Principle 5: Future West Slope needs should be accommodated as part of a new TMD project.

If a new TMD were built, this Framework assumes that proponents and affected parties would agree to its development as part of a package of cooperative projects and processes that benefit both East and West Slopes. The focus should be on pairing the potential new TMD described above with one or more of the following:

- Compensatory projects and methods (protecting and providing for both consumptive and nonconsumptive needs),
- A socio-economic compensation fund (as described in the 2010 IBCC "Letter to the Governors"), and
- Other requirements stated in the Conservancy District Act (C.R.S. § 37-45-118).

The parties would develop a new TMD and compensatory West Slope project(s) and methods in concert to ensure sufficient funding and hydrology for the whole package. Such an arrangement would provide the necessary mutual assurance that a new TMD would move forward only as a package that also accommodates both the East and the West Slopes.

The increment of additional development discussed in Principle 4 will meet some portion of future West Slope needs. The purpose of Principle 5 is to indicate that a new TMD may be part of a package of other consumptive or nonconsumptive projects and methods that may need both East Slope and West Slope financial or infrastructural support. Discussion of future West Slope needs in relation to a new TMD does not imply that West Slope entities would not move forward with additional projects and methods in the absence of a new TMD.

This principle does not imply that the new TMD project proponent would pay all costs associated with providing the basin of origin benefits to the basin of origin beyond those required to mitigate a new TMD's impacts identified in regulatory processes. Providing these benefits may require building coalitions and finding additional funding.

Principle 6: Colorado will continue its commitment to improve conservation and reuse.

Part A. Municipal & Industrial Conservation and Reuse

M&I conservation: Conservation actions defined in the No and Low Regrets Action Plan should be substantively completed prior to implementation of a new TMD project.

All M&I water providers that are covered entities should do integrated water resource planning that strives to meet the "conservation stretch goal" described in section 6.3.1 of Colorado's Water Plan. The stretch goal recognizes the need for flexibility by the local water provider to do what is technically, economically, and legally practical for their system as not every conservation practice is appropriate for every community.

Water providers participating in a new TMD project should have active conservation plans and activities approved by the CWCB in place prior to implementation of the project, and high conservation levels, as defined in SWSI, should be reached for new growth relying on water that would be yielded from a new TMD. The active water conservation plans of providers participating in a new TMD should demonstrate a commitment to work toward achieving the conservation stretch goal. These plans should have measurable outcomes. Opportunities for conservation may vary from one community to another.

Reuse: Reuse actions defined in the No and Low Regrets Action Plan should also be substantively completed prior to the implementation of a new TMD project, given technical and regulatory feasibility at the time of proposed implementation. Such actions include improved tracking and quantification, development of a statewide reuse goal, development of new incentives for reuse, and education and outreach efforts.

Additionally, water providers participating in a new TMD project and who utilize other fully consumable water supplies should have a reuse program to recycle as much water as is technically and economically practical. Existing regulations and policies may limit such reuse and the ability to make these changes may be beyond the control of the project proponent(s). The state should make every effort to allow for the reuse of these fully consumable water supplies in an appropriate and environmentally safe manner. Legislative and regulatory reform may be desirable to achieve these objectives. If such reform does not occur, key objectives of the water plan may not be realized. Reuse is further discussed in section 6.3.2 of Colorado's Water Plan.

Water & land use: Land use practices that help reduce water consumption should be supported and encouraged, focusing as much as possible on incentives. Land use is an important component in water conservation; however, further work is needed to determine strategies and partners to tackle this issue. In partnership with the Department of Local Affairs, the CWCB will initiate additional discussions on this issue with municipalities, counties, local planning agencies, and elected officials at all levels. Trainings on this issue are forthcoming. Land use is further discussed in section 6.3.3 of Colorado's Water Plan

Part B. Agricultural Conservation

When considering agricultural conservation strategies, it will be important to take a site-specific perspective and to consider the potentially negative consequences of altering the timing and amount of return flows. While some locations lend themselves well to agricultural conservation practices, others do not, and a clear understanding of the affected systems is necessary.

Current Agricultural Uses: Many of the BIPs identified the explicit interconnections between agricultural and nonconsumptive uses. In addition, several are looking to decrease agricultural shortages. As part of this work, each basin should seek to reduce consumptive non-beneficial use by following the guidelines laid out in the Colorado Agricultural Water Alliance (CAWA) 2008 Agricultural Conservation Paper (e.g., reducing soil moisture loss where practical through drip irrigation or mulching). Lining of high-priority ditches is another important tool in reducing seepage losses in appropriate areas. Phreatophyte control presents one of the largest opportunities for reducing non-beneficial consumptive use and should be pursued aggressively, although balancing this with nonconsumptive needs can be challenging. Additional incentives should be developed to assist basins in implementing, where appropriate, agricultural efficiency and conservation practices, supporting the ecosystem services agriculture can provide, and changing crop types to lower water use crops.

Future Agricultural Uses: New irrigated agricultural lands (currently identified in the North Platte, Yampa/White/Green, and Southwest basins) should be designed to either use best practices with regard to agricultural conservation and efficiency, or, alternatively, be measurably and explicitly multi-purpose by meeting identified nonconsumptive needs.

Principle 7: Environmental resiliency and recreational needs must be addressed both before and conjunctively with a new TMD.

Agriculture and Nonconsumptive Partnerships: Agricultural water can add flexibility and reliability to meet future water needs. The Framework encourages agricultural partnerships with environmental, recreational, and municipal groups to help sustain Colorado's diverse economic future and healthy environment. In addition, development of all new water projects should consider important agricultural and nonconsumptive gaps that basin roundtables have identified.

Environmental Resiliency[3]*:* Colorado's Water Plan, BIPs, and stakeholder groups across the state should identify, secure funding for, and implement projects that help recover imperiled species and enhance ecological resiliency whether or not a new TMD is built. Doing so may create conditions that make a new TMD possible but building environmental resiliency is not the sole responsibility of a new TMD proponent, since environmental and recreational gaps exist now. The Framework encourages

[3] Resilience of a stream or watershed can be measured as an ecosystem's ability to recover function after a disturbance, whether acute or chronic.

addressing these existing gaps meaningfully in the near term as well as in any new TMD-affected areas in advance of building a new TMD. Sources of funding will likely include federal, state, foundation, corporate, and private money but Colorado will likely need to develop additional funding sources. Colorado's Water Plan recommends actions that improve Colorado's environment, which will ultimately help Colorado achieve environmental resiliency.

Environmental and recreational needs in relation to a new TMD: In addition, a new, multipurpose TMD could potentially fill remaining environmental and recreational gaps as part of a package of compensatory projects. As discussed in Principle 5, a new TMD will be part of a package that also includes benefits or mitigation for environmental and recreational values. This principle encourages addressing environmental and recreational needs proactively and voluntarily up-front in project design. Proponents should include nonconsumptive partners to make the package of projects associated with the new TMD truly multipurpose. A new TMD proponent should avoid, minimize, or mitigate adverse environmental impacts where possible, and provide opportunities for environmental restoration and enhancement. Project proponents must mitigate impacts that result from a new TMD project, even if those impacts occur outside of Colorado. The financial burden of environmental and recreational enhancements, beyond the mitigation required to address the impacts of the new TMD project, will require funds in addition to those that the TMD proponent provides, and may require building coalitions and additional funding opportunities.

PUBLIC INPUT ITEM 166

Colorado River Water Conservation District
Comments on second draft, Colorado Water Plan
September 17, 2015

Compact Compliance:
The Colorado River District respectfully suggests the number one goal of the Water Plan (and the Conceptual Framework) should be continued compliance with Compacts and Equitable Apportionment decrees to which Colorado is party. Moreover, the Plan's goal with respect to the Colorado River should be avoidance of compact administration and curtailment under the compact.

The Colorado River is the river of statewide interest and use. The State has recognized that any impending Compact curtailment on the Colorado River is akin to a slow moving train, and if we fail to simply step off the tracks, we have no one to blame but ourselves. However, little is being done statewide to address the reality of declining hydrology and potential overuse on the Colorado River. Addressing this challenge is far more complex and challenging than simply "stepping off the tracks" and will require immediate, on-going and substantial investment of resources to ensure water users (statewide) of the Colorado River are never presented with the gloomy prospect of curtailing Colorado River basin water uses in response to a Compact compliance order. Among the challenges currently facing Colorado is development of a broad-based consensus to prioritize avoidance of curtailment as well as proactively preparing for an unavoidable curtailment order.

While specific mention of a "programmatic approach" to Colorado River Compact compliance in "Critical Action" VI.d.5, is important and appreciated, absent additional state commitment, it is not sufficient. Similarly, treatment of both the importance in Chapter 9 of the challenges facing Colorado associated with Colorado River Compact compliance is insufficient to inspire the necessary action.

Colorado must commit to development of a broad-based consensus plan, if only on a contingency basis, for Colorado River Compact curtailment/compliance.

The Colorado Water Plan must also clearly outline both the importance of and Colorado's willingness to commit resources to intra and interstate collaborative efforts to avoid Colorado River Compact curtailment. The Plan mentions the state's involvement in exploring a compact water bank, which recognition we appreciate, but should be clearly recognized and described as predominantly a mitigation measure to address compact curtailment dislocations.

We support demand management programs on a pilot basis only at this time. The concept needs to be proven, impacts assessed, and a consensus plan developed before the System Conservation Program or similar efforts are institutionalized on a broader scale. We support the recognition that demand management should be a measure of last resort. We believe the Plan should acknowledge that a reduction in consumptive uses (even on a temporary or rotating basis) generally equates with a reduction in agricultural production. We believe that the Plan should include additional direction that compensated reductions in agricultural production must also address the secondary impacts to the local communities.

Finally, the River District acknowledges and applauds the stated recognition, under the Compacts' Action section, that the burdens of compact compliance must be shared between native and non-native (basin) water users and multiple types of water uses.

Conceptual Framework:

The River District appreciates the countless hours and other resources reflected in the final draft version of the Conceptual Framework. Admittedly, there are elements of the Framework that we would prefer to edit but recognize there are others who would address those same edits in an opposite fashion. The revised draft is a significant improvement over earlier drafts, specifically the addition of definitions and discussions regarding terms such as "firm yield" and "insurance policy" – terms that will undoubtedly continue to be refined. **Accordingly, we believe the Conceptual Framework reasonably and accurately represents a "way forward" for constructive discussion about possible development of Colorado River basin water resources for out-of-basin use.**

In several places, the Plan refers to the Conceptual Framework still as a "conceptual agreement." "Conceptual Framework" should be used consistently and exclusively.

Conservation:

Agricultural Conservation -

Agriculture is Colorado's predominant user of water in the state; therefore, it is critical to include agriculture in the "conservation conversation." Ag efficiency, however, cannot and should neither be viewed as a panacea nor as a monolithic strategy. Other water using sectors must aggressively pursue statewide conservation, especially municipal uses. Additionally, and more importantly, agricultural efficiency cannot be viewed as having an equally consistent or uniformly positive results regardless of location.

Ag efficiencies in many parts of the state will result in reduced base flows, violations of minimum stream flows, increased call periods, and other unintended but predictable outcomes. Some locations lend themselves well to agricultural conservation and efficiency practices, others do not, and a clear understanding and differentiation of the affected systems is essential. Different agricultural efficiencies result in reductions in diversions, evaporation, return flows – both immediate and delayed - and other historically non-consumptive uses. Other efficiencies result in reduced consumptive water use and others increased consumptive use.

The Plan must recognize that agricultural conservation and efficiency measures must be evaluated by type and location for potential benefits and impacts to the system as a whole.

The Plan must recognize that considerable financial, technical, and other resources are required to realize the potential benefit from the broad topic of ag conservation.

The River District applauds the inclusion of "resilience" among the goals for Ag Conservation and Efficiency. If we truly wish to preserve our agricultural heritage and its many benefits, we must work cooperatively with the ag community to ensure they are as well prepared as municipal and industrial water users to weather prolonged droughts, compact curtailments, and other interruptions to a sustained water supply.

Municipal Conservation -
The River District endorses the adoption of the "stretch goal" for municipal conservation. We do this with the express recognition that many of our constituent municipalities have the most work to do. However, we believe the Plan should further define the stretch goal and augment chapter 10 with additional, related action plans.

Comparable measurements for water use and water conservation will continue to be a challenge in the state. Even our municipal uses are widely varied and location specific. Nevertheless, **the Action Plan should include establishment of a consensus measurements and reporting of municipal gallons per capita per day (GPCD) of municipal water use. Further, the Plan should include either a uniform numeric goal for GCPD or at the very least a goal of developing a consistent GPCD goal that is consistent with the statewide stretch goal for municipal conservation.**

Colorado is an aggressively local control state. While considerable resistance to uniform, statewide conservation goals are predictable, our hope is that they may be acceptable if **the means to achieve the municipal conservation goal(s) are expressly reserved for local community/utility/district decision-making and implementation.**

Land Use and Water:
The River District applauds the elevation and greater detail given to this threshold issue in the second draft. Institutionalizing a more formal tie between land use decision-making and water supply planning and water conservation is the next great challenge facing this state. This section of the Water Plan is constructive but must do more to raise the bar and advance this critical issue.

Additional specific goals and actions should be added to the final Plan. At a minimum, every municipality and utility, working with its associated land use authority(ies), should review and revise its land use codes to ensure inclusion of meaningful and effective water supply planning and conservation elements.

The Department of Local Affairs, working with the CWCB, should develop model land use plans/codes for water planning and conservation to be considered by all local land use authorities.

The River District does not wish to "demonize" lawn grass. However, outdoor landscaping is by far the greatest, single consumptive use of municipal water supplies. Accordingly, **the Plan must include specific, measurable goals for turf-related conservation.**

The Plan states that fewer than 50% of Colorado cities collect impact fees for water supply purposes, and only 5% of utilities charge conservation-oriented tap fees. The Action Plan should state numeric objectives, consistent with the stretch goal, for municipalities' land use and development approval processes.

Table 5-2 provides a thorough and instructive recitation of residential demand management strategies. **Chapter 10 would benefit from a reproduction of Table 5-2 with the numeric goals listed for each measure that are implicit in or supportive of the stretch goals.**

Reuse:
Reusable water is a tremendous future supply alternative but may be too expensive for some of the smaller utilities to realize. The opportunity for grants mentioned in III.b. of Chapter 10 is welcomed, but **Chapter 10 should include provision of technical assistance as well as assistance with creating partnerships to take full advantage of reusable water supplies.**

Additionally, the Critical Actions to encourage reuse can be read to be exclusively focused on *regional* reuse. **The language in III.b. should be expanded to clarify that individual, as well as regional and shared reuse, are included in these Critical Actions.**

The CWCB should commit to identifying reusable water supplies along with an estimate of costs and legal and institutional barriers to implementation.

Stream Management:
The River District concurs with and endorses the Action Plan to "provide $1 million annually to support stream management and watershed plans." However, we find the Action item in V.c.1. to "Develop stream management plans for priority streams . . . having environmental or recreational value" to be unnecessarily limiting. **The Critical Actions in this section should be clarified to include any and all streams identified by the local roundtable as needing or potentially benefitting from a stream management plan.** We can think of few streams that would not benefit.

This section should also include a recognition of the need for stream management plans far outstripping the available resources and include a commitment for the CWCB to provide technical and other assistance in securing non-state funding resources.

Future of Roundtables:
The River District believes that the roundtables have, to date, and should continue to be the focus of continued success for the House Bill 05-1177 process. Additionally, the final Plan should clearly state the state's intent to continue to rely on the roundtables as the primary priority

setting, policy establishing, project identifying, and action-coordinating entity for initiatives affecting that basin. **Although broadly suggested throughout the Plan, we believe the Plan would benefit from a clear, declarative policy statement (in Action Plan VI.a.? and Chapter 11) that it is the state's desire and intention to continue the work of and support for the basin roundtables.**

PUBLIC INPUT ITEM 168

Colorado Legislative Council Staff

Room 029 State Capitol, Denver, CO 80203-1784
(303) 866-3521 • FAX: 866-3855 • TDD: 866-3472
www.colorado.gov/lcs
E-mail: lcs.ga@state.co.us

M E M O R A N D U M

September 17, 2015

TO: James Eklund, Director, Colorado Water Conservation Board

FROM: Water Resources Review Committee

SUBJECT: Feedback Regarding the Colorado Water Plan

Pursuant to Senate Bill 14-115, the Water Resources Review Committee is required to review statewide planning for water resources. The committee is also required to hold at least one public hearing in each geographic region associated with basin roundtables during the 2015 interim. The purpose of these hearings is to collect feedback from the public on the draft Colorado Water Plan. During the 2015 interim, the committee held nine meetings to collect feedback from the public on the second draft of the Colorado Water Plan in Alamosa, Aurora, Craig, Durango, Granby, Greeley, Montrose, Salida, and Walden. The committee has also received public comments in the form of letters and e-mails, handwritten questionnaires, and questionnaires that were completed on the committee's website.

According to Senate Bill 14-115, the deadline for the Water Resources Review Committee to provide feedback on the Colorado Water Plan is November 1, 2015. A forthcoming letter from the committee to the Colorado Water Conservation Board will provide additional comments on the draft Colorado Water Plan. Staff was instructed to circulate a draft of this letter for the committee's review by September 29, 2015. A final draft of the letter will be provided to the Colorado Water Conservation Board shortly thereafter to ensure the board is able consider the committee's feedback as it drafts the final Colorado Water Plan.

Table 1 - Feedback on the Colorado Water Plan. Attached to this memorandum is a table that summarizes public feedback provided to the Water Resources Review Committee as of September 15, 2015. The comments in this table are staff's interpretation of what are the most important and salient elements of the public's feedback. It also includes a recommendation from the committee concerning the final Colorado Water Plan.

Feedback on the Draft Colorado Water Plan[1]

Feedback from the Water Resources Review Committee	
Committee Action	**Recommendation for the Final Colorado Water Plan**
This recommendation was approved unanimously at the September 15, 2015 regular meeting.	Add additional information about funding available for water conservation system improvements to the chapter concerning alignment of state resources (currently Chapter 9 of the Second Draft). Specifically, add the following statement to the discussion on the Colorado Water Resources and Power Development Authority: • "Water conservation system improvements, such as smart metering technology, more efficient customer billing and communication systems, and other related technologies used to influence behavior to achieve water conservation goals, are eligible for financial assistance from state revolving funds as part of a water system capital improvement project."

Public Comments Provided Outside of Committee Meetings	
Source of Comment	**Summary of Comments**
Charlie Preston-Townsend, Vice President, Friends of the Yampa Submitted in a July 15, 2015, e-mail to the Water Resources Review Committee	• The state of Colorado shall view the Yampa River as a significant and reliable source of water to meet Colorado River Compact obligations. • Colorado shall hold nonconsumptive needs as a priority and consider the significant conservation work that has been accomplished in the Yampa River Valley as an example for future water planning. • The Yampa Valley and Western Slope water users must be assured that, in the event of a compact call, negotiated equitable apportionment will be utilized to protect our many important junior water rights. • The Eastern Slope must maximize water use efficiency through a variety of methods including, but not limited to, conservation, reuse, fallowing, new and expanded Eastern Slope storage, and wise land-use planning principles.

[1]Comments in this table are a summary of comments provided during public hearings of the Water Resources Review Committee, as well as comments submitted in e-mails, letters, and completed questionnaires. This summary does not include background information or other public comments not directly related to the draft Colorado Water Plan or water policy recommendations. A more complete record of the public comments is provided in meeting summaries and audio recordings of the committee hearings that are available at http://www.colorado.gov/lcs/WRRC.

Feedback on the Draft Colorado Water Plan (Cont.)

Public Comments Provided Outside of Committee Meetings	
Source of Comment	**Summary of Comments**
Allen D. (Dave) Miller Submitted to Water Resources Review Committee staff in a document on August 27, 2015.	• Colorado water planners are ignoring a proposed, U.S. patented, high altitude, multiple river basin, pumped water and energy storage solution in the Gunnison National Forest, called the Central Colorado Project. • Innovative high altitude, multiple river basin, pumped water and energy storage projects could help Colorado and all western states reach their renewable energy goals from sporadic wind and solar operations much sooner than projected. High altitude, multiple river basin, pumped water and energy storage projects are also near and long-term solutions for highly variable western droughts, growth, recreation, environments, and climate change, throughout the 21st century and beyond. All Colorado, western, and national leaders should immediately call for objective economic and environmental comparisons of innovative high altitude, multiple river basin, pumped water and energy storage projects with traditional alternatives, as required by National Environmental Policy Act rules and good science. • A state audit of Colorado's failed water planning practices is also needed.
Jessie Shaffer, Chairman, Pikes Peak Regional Water Authority Submitted in a September 14, 2015, letter to the CWCB, the IBCC, and the WRRC. A copy is available on the WRRC website.	• Chapter 6 of the draft Colorado Water Plan should clarify the relationship between the state and local public water supply entities and deemphasize a philosophy of state level "command, compel, and control." • Section 6.3.1 of the plan should include a discussion of the use of structured or tiered tap fees as a method of incentivizing water conservation with a particular focus on reducing the presence of irrigated lawn areas. • Conservation includes the replacement of nonrenewable water supply with renewable water supply. • Per capita water use should be framed in a proper context to avoid inappropriate conclusions. • The Plan should not require that all water suppliers use all of the tools that it identifies, as some are more or less useful in certain contexts. • Future action 2 b should be stricken from Table 6.3.1-1 of the draft Colorado Water Plan. Future action 5 c should be revised or stricken. Future action 5 d should be stricken. • The Plan should consider and clarify whether the stretch conservation goal is aspirational or a mandate. • Water supply providers that have undertaken a project consistent with their basin's BIP should be presumed to have met the Plan's requirements for integrated water supply planning. • With respect to Section 6.3.3, the plan should insulate local water providers from being punished for abstaining from doing something they are not legally allowed to do. • The Plan should clarify the list of funding strategies in Section 9.2 as representative rather than exhaustive. Funding strategies should be evaluated for their potential long-term financial contributions and aligned with component parts of the plan. • Sections of the Plan concerning permitting procedures should be revised to reflect the Governor's call for streamlining. • The Plan should clarify that the Plan's conceptual framework shall be applied only to evaluations of future transmountain diversions.

Public Comments from July 20, 2015 Southwest Basin Hearing	
Source of Comment	**Summary of Comments**
Art Goodtimes, San Miguel County Board of County Commissioners	• The Colorado Water Plan should quantify evaporative water losses from water storage. (This comment was provided at the July 20 regular committee hearing).
Judy Garrigues, Dolores Conservation District	• New storage has limited use because we can only save as much water as precipitates. • Soil conservation is important to stave off dust bowl conditions.
Travis Custer, Dolores Conservation District	• Chapter 10 of the draft Colorado Water Plan seeks to develop a strategic education program to promote agricultural water conservation and soil health initiatives. It should also identify conservation districts as partners, in addition to the state and federal agencies identified in Chapters 6 and 9.
Kate Greenberg, National Young Farmers Coalition	• Section 6.5 of the draft Colorado Water Plan mentions reducing barriers to entry for young farmers. This should be emphasized further in the plan. The state needs a workforce that can sustain agriculture and food production. Access to land, capital, education, and training for young farmers ought to be priorities. • In a survey of over 375 western young farmers, over 94 percent are implementing some type of conservation, most commonly soil conservation.
Ed Millard	• The state should identify a target population that reflects Colorado's limited water resources. • Colorado is planning for overbuilding and overdevelopment. Instead, the state should target a smaller, sustainable population that can allow for preservation of the state's quality of life.
John Ott, James Ranch and Animas Water Company	• Soil health should be recognized as an effective method of water storage.
Dick Ray, Archuleta County Farm Bureau	• Colorado is approaching its human carrying capacity. Population growth should be slowed.
Bruce Whitehead, Executive Director, Southwest Water Conservation District	• Additional water storage is needed in the state including additional water storage on the East Slope, such as the Northern Integrated Supply Project.
Steve Harris, Harris Water Engineering	• The state sales tax should be increased to fund water infrastructure projects. • Outdoor water use should be limited to 30 percent of residential water use.
Jake Gardanier, Southwest Farm Bureau	• Additional storage in the South Platte Basin should be considered.
John Porter, Southwestern Water Conservation District	• The 2003 Colorado Water Projects Bond Referendum, also known as Referendum A, failed because voters perceived it as a top-down approach without clearly identified projects. A water project bond referendum that is developed through a more grassroots process would have a better chance for approval by the voters.

Public Comments from July 21, 2015 Gunnison Basin Hearing	
Source of Comment	**Summary of Comments**
Stephen Schrock, NoChicoBrush	• Chapter 10 Critical Action Plan (4) (b) (2) concerning support for agricultural conservation and efficiency should include state grants to farmers and ranchers for on-farm irrigation efficiency and small hydropwer. • The public trust doctrine is in conflict with the doctrine of prior appropriation. The voters should be provided meaningful water projects as an alternative to the public trust doctrine.
Jay Jutten	• Additional water storage is needed on both the East and West Slope. • Burdensome regulations of water projects should be reduced. • Agricultural return flows are important to other water users.
Jaris Jutten (submitted completed questionnaire)	• More storage is needed throughout the state. • No transmountain diversions. • Keep prior appropriation.
Dave Whittlesey, Overland Ditch and Reservoir Co.	• Additional water storage is needed for agriculture and to help the state comply with interstate compacts. • Onerous federal environmental regulations should be eliminated.
Larry Clever, General Manager, Ute Water	• Additional water storage is needed but there is no water in the Colorado River Basin that can be developed. • State law should be amended to allow the Colorado Water Conservation Board to loan money for projects that have more than one owner. • The state should consider importing water from the Mississippi and Missouri Rivers. • The Colorado Water Plan should plan for the state's water needs beyond 2050. • The West Slope should not be required to pay for any new transmountain diversions.
David Crane	• Additional water storage is needed on the East Slope. • Protect the agricultural economy to protect the state's quality of living and to attract new workers. • Protect water rights.
Don Suppes, Mayor of Orchard City	• Eliminate unnecessary requirements to obtain funding from the Colorado Water Conservation Board that increase the cost of the project, such as historic reviews for construction projects. • The Colorado Department of Public Health and Environment's graywater regulations are too burdensome.
Glenn Davis, Montrose County Commissioner	• Climate change is not an issue that should be addressed. • The water needs of humans should take precedence over water needs for the environment. • Without agriculture, Western Colorado will dry up.
Sandy Head, Executive Director, Montrose Economic Development Corp	• Water is needed for a healthy economy and for the quality of life that attracts new employers and employees.
Bob Brown, Montrose Chamber of Commerce	• “Buy and dry” negatively affects the business community.

Public Comments from July 22, 2015 Yampa-White Basin Hearing	
Source of Comment	**Summary of Comments**
T. Wright Dickinson	• Allow the HB 05-1177 process to continue and identify legislation needed to address future water supply challenges. Water legislation should reflect the consensus of the water community and not the preference of special water interests. • East Slope communities should maximize water conservation prior to seeking additional West Slope water supplies. • Any new transmountain diversions should be developed in accordance with the Interbasin Compact Committee's conceptual framework for new transmountain diversions. • Agricultural water use efficiency may negatively impact return flows and late season streamflows that are important to the environment and recreation. • Additional storage is needed to meet municipal water demands. • Chapter 10 of the Colorado Water Plan should be amended to create the goal of a "vibrant" and productive agriculture instead of a "viable" and productive agriculture. • Restrictions should not be placed on the ability of farmers and ranchers to sell their land and water as the proceeds from such sales are needed for retirement.
Pat O'Toole	• Additional water storage is needed. Water supply solutions should occur sooner than later due to the rising cost of construction. • States should be given greater authority to issue permits for water projects. • Due to improvements in water purification technologies, municipalities should be encouraged to use nonpotable water supplies such as water produced from oil and gas development.
Sasha Nelson, Conservation Colorado	• The legislature should enact legislation to proactively increase conservation and efficiency, modernize agriculture and water-sharing practices, and maintain healthy rivers. • The Colorado Water Plan should include criteria for evaluating proposed water projects including conservation, local support, and avoiding harmful impacts to rivers, and a requirement that these criteria be satisfied before a project receives state assistance. • Water conservation should be maximized before new transmountain diversions are allowed.
Kevin McBride Feedback was also provided during the July 22 regular meeting.	• Separate water plans should be developed for each basin because their water needs and resources are unique. • A portion of Colorado's undeveloped compact entitlement should be reserved for the Yampa-White Basin. • Any water legislation should encourage flexibility in water use and recognize the diversity of river basins. • Unappropriated water from the Yampa-White Basin enables Colorado water users in other Colorado River basins to comply with its interstate compacts.
Jackie Brown	• The Colorado River Compact allows each state to develop its allocation as it sees fit. The legislature should follow a similar course and allow the Yampa-White Basin to develop unappropriated water in the basin at its own pace.

Feedback on the Draft Colorado Water Plan (Cont.)

Public Comments from July 22, 2015 Yampa-White Basin Hearing (Cont.)	
Source of Comment	**Summary of Comments**
Ken Brenner, Director Upper Yampa Water Conservancy District Board of Directors, Friends of the Yampa This feedback was provided during the July 22 regular meeting.	• The Interbasin Compact Committee's conceptual framework for new transmountain diversions needs additional clarification and should include enforcement measures to protect exporting basins. The framework should only be viewed as a starting point for future negotiations over new transmountain diversions. • There should be no new transmountain diversions because they will hinder Colorado's ability to comply with interstate compacts and limit the Yampa-White Basin's ability to address future water needs. • The water plan should recognize Governor Ritter's water supply solutions including water conservation, water reuse, East Slope water storage, and fallowing to promote water sharing between irrigators and municipalities.
Ben Beall This feedback was provided during the July 22 regular meeting.	• The Colorado Water Plan should discuss protocols for addressing water users' ability to divert water for health, safety, and welfare purposes if there is a Colorado compact call. • Protocols should be developed through legislation or other means that determine how to apportion the impact of a compact call equitably across river basins.
Marsha Daugenbaugh This feedback was provided during the July 22 regular meeting.	• The Colorado Water Plan needs to focus on new agricultural efficiencies and non-traditional ideas that new farmers are exploring. • There should be no more transmountain diversions, especially those intended for non-food consumption uses. Agricultural, environmental, and recreational uses are dependent on each other in the Western Slope and each would suffer if there were more transmountain diversions.

Feedback on the Draft Colorado Water Plan (Cont.)

Public Comments from August 10, 2014 Rio Grande Basin Hearing	
Source of Comment	**Summary of Comments**
Don Shawcroft, Colorado Farm Bureau	• Additional water storage is needed in the state to capture surplus water crossing the state's boundaries. • The state should declare a water emergency and urge the federal government to allow the state to store additional water. • Section IV of Chapter 10 of the draft Colorado Water Plan concerning support for agricultural conservation and efficiency should further define "saved" water and explain that conservation of agricultural water rights is different from conservation of municipal and industrial water rights. It should also explain who may benefit from the marketing of saved agricultural water rights.
Dick Ray, Colorado Outfitters Association	• Water availability determines Colorado's carrying capacity. • Additional headwaters storage should be built to capture any surplus water. • The state should be more concerned about new residents using water rights.
Mike Mitchell, Colorado Farm Bureau	• New residents should learn about Colorado's water laws and water use traditions. They should also better understand the impacts of rainwater harvesting on other water users and understand how agricultural return flows benefit other water users. • The Prior Appropriation Doctrine should be protected.

Feedback on the Draft Colorado Water Plan (Cont.)

Public Comments from August 11, 2015 Arkansas Basin Hearing	
Source of Comment	**Summary of Comments**
Tom Goodwin	• Personal income spent on food has decreased over the past several decades, but the loss of agriculture could lead to rising food prices and loss of disposable income that consumers spend on other products. • Additional storage on the East Slope is needed.
Kip Petersen, Vice President, Pikes Peak Regional Water Authority A copy of Mr. Petersen's written testimony is included in the August 11 meeting summary and available on the WRRC website. *Additional comments from the Pikes Peak Regional Water Authority were submitted outside the meeting both to the WRRC and directly to the CWCB. These are available on the WRRC website.	• State and federal permitting requirements should be streamlined to avoid unnecessary reviews and costs being imposed on water providers and their customers. • The Colorado Water Plan should recommend that all state agencies coordinate their review of water projects and use the same analysis and expert input. • Environmental analysis for federal agencies should be used by state agencies without requiring duplicate analysis. • Projects endorsed by the state should be supported in federal permitting and for funding. • The Interbasin Compact Committee's "stretch goal" of 400,000 additional acre-feet of municipal demand reduction should be vetted by more stakeholders before being endorsed by the state. • Under Section 10.3 III of the second draft of the Colorado Water Plan, prior conservation achievements are not incorporated or recognized as value-added accomplishments. This creates a disincentive to do anything not prescribed or mandated by the state government since they might be discounted or ignored by the state. • The Colorado Water Plan should recognize that Colorado does not currently allow direct potable reuse (DPR). The plan should recommend funding and research to develop standards and processes for DPR, and recognize the role of the Water Quality Control Commission in authorizing DPR. • The State Water Plan is too directed at municipal and industrial use, the smallest percentage of water consumption in the state. Further study should be conducted concerning how agriculture can be more efficient in the use of water, along with a mechanism to provide for funding for agricultural irrigation enhancement.
Dick Brown, Pikes Peak Regional Water Authority	• The state should provide financial support to farmers participating in water conservation, including tax credits and other tax incentives. • We need local participation and control of water projects.

Public Comments from August 11, 2015 Arkansas Basin Hearing (Cont.)	
Source of Comment	**Summary of Comments**
Bob Kattnic	• Water is a human right and ought to be held in a public trust, and private property rights should be protected. • A state's water supply determines that state's human carrying capacity. An ideal population should be below the carrying capacity in order to preserve a healthy state. • Additional storage should be built to reserve precipitation in wet years so that it can be used in dry years. • California's growth and political muscle will lead it to draw more water from Colorado. This could restrict Colorado's ability to divert water from the West Slope to the East Slope • Colorado is not an agricultural state, but a municipal state, and our water will eventually follow the money to the detriment of the state's agricultural industry. • Water planning requires prioritizing competing interests. • The state only has one chance to create a successful water plan.

Feedback on the Draft Colorado Water Plan (Cont.)

Public Comments from August 11, 2015 Arkansas Basin Hearing (Cont.)	
Source of Comment	**Summary of Comments**
Drew Peternell, Trout Unlimited	• The state ought to consider ideal stream flow rates through stream management plans. • Additional funding should be provided for stream management plans. • The Colorado Water Plan should further emphasize agricultural efficiency. • Additional funds should be provided for agriculture efficiency.
Brett Gracely, Colorado Springs Utilities	• The state water plan needs to recognize that water projects occur simultaneously and they often lack coordination with one another. • The level of conservation advocated in the state water plan will be difficult to achieve quickly because no court order or executive action can drive conservation at such a pace. • Additional water storage will enable more flexible water use, such as exchanges. • Regulations promulgated by different agencies are a hindrance to water projects, especially for smaller water providers. • Different basin implementation plans have different goals and are, at times, in conflict with one another, which could lead to future inconsistencies in planning.
Julie Nania, High Country Conservation Advocates	• Crested Butte's water supply, Coal Creek, is listed as contaminated with heavy metals from mining. Coal Creek is treated by a water treatment facility that is required to operate in perpetuity, despite the financial difficulties faced by the plant's owner and operator. Under current law, the Colorado Department of Public Health and Environment may require bonds to ensure that water treatment project can continue when an operator goes bankrupt, but these are rarely used in practice. The state should revisit bonding requirements for water treatment projects.
Public Comments from August 12, 2015 Colorado Basin Hearing	
Stan Cazier, Middle Park Water Conservancy District	• Water is not available in the Colorado River Basin for new transmountain diversions. • Outdoor water use should be limited to 30 percent of residential water use. Otherwise, additional agricultural water rights will be transferred to satisfy the growing municipal water demand. • Colorado should follow the example of California in order to curtail water usage and declare a state of emergency to address the drought conditions. • Concerned about how future water projects will be funded.
Abby Burk, Audubon of the Rockies	• Overuse of many of Colorado's rivers has impacted river health and the environment. The Colorado Water Plan should identify funding for healthy flowing rivers to protect the environment and the recreation economy.
Bill Thompson	• The state should help ensure an adequate water supply for water users in Grand County.

Public Comments from August 12, 2015 Colorado Basin Hearing (Cont.)	
Source of Comment	**Summary of Comments**
Torie Jarvis, Northwest Colorado Council of Governments, Water Quality and Quantity Committee A copy of Ms. Jarvis' written testimony is included in the August 12 meeting summary and available on the WRRC website.	• The state should act as a neutral facilitator in order to create a more efficient permitting process. • Local interests should be more involved in developing and reviewing water projects. • The Joint Review Process (Article 10 of Title 34, repealed in 2003) should be reestablished so that all permits from all state offices may be coordinated. Under this process, local affected interests would also be at the table from the beginning, before NEPA begins, and can express local concerns as well as mitigation concepts at the earliest possible time. The NEPA process would also be less onerous because reports and studies can focus on the real concerns instead of hypothetical concerns. Also, agencies with regulatory authority will be discussing their concerns and can avoid duplicative requirements on the applicant. • The Colorado Water Plan recommends potential endorsement of projects to make permitting more efficient. State endorsement of a project without first requiring local approval of a project could create the situation where the state advocates for a project before local permitting processes occur or even after a local government denies a permit. • Tying state endorsement and preliminary § 401 certification to the draft environmental impact statement (EIS) would make it harder for the state to change or deny certification later based on the more complete and accurate final EIS, and based on its own processes such as the anti-degradation review. • Some sections of the Colorado Water Plan call for the state to consider funding or filing for water rights for future water projects, including transmountain diversions. This is not the proper role for the state and should not be part of the Colorado Water Plan. The state should not assume the role as a proponent of a water project until the state regulatory process has been completed and the project has been agreed to by the impacted local governments in the area from which the water would be diverted. • Financing for water projects should not occur unless affected local governments approve the project. • Funding is an important issue for land use planning and conservation.
Lurline Underbrink-Curran County Manager, Grand County	• Return flows from agricultural water diversions benefit stream flows in the Colorado Basin. The Colorado Water Plan should not promote water use efficiency policies that may impact agricultural return flows. • The Colorado Water Plan should focus more on agricultural users and agricultural efficiencies.
Merrit Linke, Grand County Commissioner	• Return flows from agricultural water diversions benefit stream flows in the Colorado Basin and help keep streams cooler. • The Windy Gap Project increases the temperature of water stored in the reservoir and hampers the passage of fish. The Windy Gap Bypass Project will benefit fish and the environment by keeping stream temperatures cooler and enabling the passage of fish.
Paul Bruchez, Agriculture Representative on the Colorado Basin Roundtable	• Public education helps residential water users better understand the impact urban landscapes have on rivers and streams. • Voluntary programs, including education and outreach, should also be used to encourage irrigators to use water in a manner that protects the environment while maintaining agricultural productivity.

Feedback on the Draft Colorado Water Plan (Cont.)

Public Comments from September 14, 2015 North Platte Basin Hearing	
Source of Comment	**Summary of Comments**
Ty Wattenberg	• The Water Supply Reserve Account funding component of the plan should be kept as whole as possible, and more funds should be added to the account. All basins will need additional funding in order to implement components of the plan. • Alternative transfer methods should retain the current sideboards in place, such as regulating the time in which water can be leased. • The state should be more involved in the funding of projects, and there needs to be more creative ways to fund projects. • The education of voters about water issues is an important component of the water plan.
Carl Trick	• Water Supply Reserve Account funding should be put towards lowering the gap in municipal and industrial supply. • The plan is not strong enough in its current form. It needs more requirements rather than suggestions. • There should be an emphasis on increasing storage on the South Platte and along the Front Range. Agricultural users in the Front Range and along the South Platte are connected to the agricultural users in the North Platte Basin. • Everyone involved in developing the plan should compromise, but that is currently not happening. Current projects have been halted due to specific concerns, i.e. environmental, and the state should become more involved with those projects to ensure that groups involved are compromising with each other to get water projects completed. • The General Assembly should help to streamline the permitting process in order to complete water projects.

Public Comments from September 14, 2015 South Platte Basin Hearing	
Source of Comment	**Summary of Comments**
Joe Frank, Chair South Platte Basin Roundtable The Metro and South Platte Basin Roundtables combined, will send a 12-page letter to the Colorado Water Conservation Board that includes comments and information that was agreed to by both roundtables. Highlights of the agreement are identified in the following column.	• The doctrine of prior appropriation must be defended. • The Colorado Water Plan advocates for the rehabilitation of existing storage or underground storage. It also says that new storage is controversial. The plan should explain why new storage is controversial and identify alternatives to overcome it. Overcoming this controversy should be a high priority and emphasized in Sections 4, 6 and 10 of the plan. Both above-ground and underground storage is needed to facilitate alternative transfers, augmentation, and to benefit the environment and recreation. • Conservation and reuse is an important piece of the Colorado Water Plan but the plan needs to keep building on conservation and reuse. • The plan's conservation stretch goal is aspirational. It should not receive greater emphasis in the plan that other methods for meeting the demand gap. • The plan should also recognize that agricultural efficiency does not create new water and that it may impact streamflows and other water users. • The plan should advocate for a more efficient water project permitting process including a more active role for the state that begins earlier in the permitting process. • The plan should be balanced and provide equal emphasis to all methods for meeting the demand gap including conservation and reuse, alternative transfer mechanisms, completion of identified projects and process, and the development of Colorado's compact entitlement.
Jim Hall, Northern Colorado Water Conservancy District	• The Colorado Water Plan should clearly support the Colorado Doctrine of Prior Appropriation. • The plan should focus on increasing conservation and reuse. • The plan and the legislature should recognize the wisdom of local control and one size does not fit all with regards to conservation. The needs and abilities of water providers and municipalities differ across the state. • The plan should recognize the interdependence of water users. For example downstream agricultural water users rely on municipal return flows. • The plan should more clearly recognize the importance of return flows and not create the false hope that reuse and conservation is the solution to the state's water supply needs. • The plan should more clearly emphasize the need for additional storage. It should also identify underground and other storage options in addition to identified projects and processes and the rehabilitation or expansion of existing facilities that are discussed in Chapter 10 of the plan. • The permitting process for water projects should be streamlined and a task force on permitting issues should be convened. The plan should more clearly state that nothing in the plan will be used to expand the permitting process. Amendments to the water quality statutes and regulations should be considered to make them more applicable to water storage projects. The current statutes and regulations were developed primarily to address the impacts of water pollution discharges. • The plan should promote collaboration to ensure that Colorado meets its compact obligations and is able to develop its compact entitlement. • The plan should promote voluntary demand management and the development of a protocol to achieve required curtailment if voluntary methods fail.

Public Comments from September 14, 2015 South Platte Basin Hearing (Cont.)	
Source of Comment	**Summary of Comments**
Burt Knight, City of Greeley	• The Colorado Water Plan should preserve and protect Colorado's prior appropriation doctrine as specified in state constitution. • A water right is a property right. The state should not impact those rights through rules and statutes, and further complicate the system. • As the state asserts a greater role in water supply planning, it should not preempt local control or impose one-size-fits all solutions. • As the state develops new formulas to measure progress on conservation, it should also recognize prior conservation accomplishments. • Conservation shouldn't be the dominant focus in the plan. • The Colorado Water Plan should include a chapter on storage that explains how storage mitigates drought impacts and benefits stream health. It should also explain how storage helps secure water supplies and provides flood control, water to fight wildfires, and redundancies when water systems are compromised by wildfires. • Unallocated water exists that should be captured. • Chapter 10 of the plan should not advocate for a change in the law to allow funding for certain projects until the final Colorado Water Plan is released and consensus exists for such a change.
Sean Conway, Weld County Commissioner	• Water storage should be increased. • The Northern Integrated Supply Project (NISP) will provide flood control benefits and help preserve irrigated agricultural lands. If this project is not built (the no alternative option in the environmental impact assessment), large amounts of agricultural water rights will be transferred to meet the demand for municipal water. • Buy and dry is devastating to Weld County agriculture as well as West Slope farmers and ranchers. The West Slope should help support NISP and other projects that address East Slope water supply needs without the use of new transmountain diversions. • Conservation should be a vital component of the plan as well as additional water storage. • Collaboration is needed to meet Colorado's water supply challenges.
Randy Ray, Central Colorado Water Conservancy District	• There are a lot of opportunities for additional water storage in lined gravel pits. • The environmental pool in the Chatfield Reallocation Project should be viewed as a model for other water storage projects. • Irrigated agriculture landscapes are important to urban residents. • While efficient water use stretches water supplies, it also removes return flows from the system. The South Platte River is a gaining system that depends on return flows. Eliminating return flows will impact downstream water users. Conservation and efficient use of water can be utilized, but properly located storage can likely solve the problems created with efficiency.

Public Comments from September 14, 2015 South Platte Basin Hearing (Cont.)	
Source of Comment	**Summary of Comments**
Alan Gentz	• Additional water storage is needed on the East Slope and the West Slope. • Irrigated agriculture is already efficient. Increased efficiency, such as the replacement of flood irrigation with sprinklers, reduces groundwater recharge. • The Colorado Water Plan should protect water rights and Colorado's water law.
Bill Jerke	• The process for building water projects is too cumbersome. • NISP will help preserve irrigated agricultural lands. If this project is not built, large amounts of agricultural water rights will be transferred to meet the demand for municipal water. • There are mutually beneficial storage options that can provide water to the East Slope and provide benefits for the West Slope including drought protection and additional flows for recreation.
Peter Bridgeman	• The Northern Integrated Supply Project is critical as well as the Chimney Hollow Reservoir and Windy Gap Firming Project. • Water must be used more wisely to stretch this limited supply. • Water conservation will not satisfy all of Colorado's water needs. Additional storage is needed to satisfy these needs.
Delores Martindale	• The prior appropriation doctrine must be preserved for those who have water rights.
John Martindale	• Developers, homeowners' associations, and golf courses should increase their water conservation efforts.
Roni Sylvester	• Over augmentation is contributing to high groundwater levels in the South Platte Basin. • The Colorado Water Plan should include a discussion on Platte River Endangered Species Recovery Program and its effect on Colorado's ability to develop its compact entitlement.
Bruce Johnson	• Colorado's water must be managed to meet future water demands.

Public Comments from September 15, 2015 Metro Basin Hearing	
Source of Comment	**Summary of Comments**
Celia Greenman A copy of Ms Greenman's written testimony is included in the September 15 meeting summary and available on the WRRC website.	• To promote healthy rivers, the Colorado Water Plan should consider the volume, frequency, and timing of flows necessary to maintain river health and the plan should identify funding for such assessments. Once these nonconsumptive water needs are identified, they should be met through increased conservation, reuse, and efficiency. • The Colorado Water Plan, which currently considers average yield for water storage projects, should instead consider safe or firm yield. Safe or firm yield is the amount of water that a project can deliver year after year, despite droughts. • Transmountain diversions do not benefit the Western Slope or the state's robust tourism industry. • Energy producers, including those obtaining oil and gas through hydraulic fracturing, should primarily use recycled water. • The plan should not consider water needs for oil shale development as this resource is not economically viable and would require substantial amounts of water and energy to develop. • Oil and gas development should also be excluded from areas near bodies of water.

Public Comments from September 15, 2015 Metro Basin Hearing (Cont.)	
Source of Comment	**Summary of Comments**
Ken Ransford A copy of Mr. Ransford's written testimony is included in the September 15 meeting summary and available on the WRRC website.	• Healthy rivers were the public's primary concern when polled in the Colorado Basin Implementation Plan outreach in 2014. In nearly every case, the best way to improve rivers is to add more water to them. The use it or lose it practice in Colorado results in far more water being diverted from streams than crops need or can consume. Water law reform is necessary to remedy this, particularly by eliminating the abandonment risk. Policymakers should adjudicate each farmer's consumptive use right based on acres irrigated as shown on GIS maps. Without basin of origin protection, the Western Slope fears that the Eastern Slope will obtain rights to water left in rivers. For many Western Slope residents, this justifies excessive river diversions despite the harm to rivers. Funding is needed for irrigation system efficiency improvements, such as the Orchard Mesa irrigation improvements in Grand Junction. • Up to 1 million irrigated acres in the South Platte and Arkansas basins will be lost to urban and suburban sprawl. Colorado's Water Plan does not address this. The Colorado Basin cannot prevent this loss of irrigated agriculture by diverting still more water to the Front Range. Irrigation reform is thwarted by water court expenses and by excessive concern with return flows. Water laws promote flood irrigation to protect return flows and avoid the no injury rule. Farmers in Australia's Murray-Darling Basin eliminated return flows by converting to sprinklers between 1991 and 2008. In Colorado, 97 percent of irrigated acres in the Republican Basin use sprinklers. We can sustain and aid agriculture with zoning protection, conservation easements, denser development, easing barriers to alternative transfer methods, and making water freely transferable. Colorado's Water Plan should estimate how much land is needed to grow enough food to sustain Colorado's current and projected population, and discuss how to protect that land. • Increasing river flows will improve water quality. Increasing river flows on Western Slope rivers and preventing any additional transmountain diversions is essential to ensure safe drinking water. • Land use decisions should be made with water budgets. Local jurisdictions can determine their own water budgets and water use practices, but all future development in Colorado should target high conservation. • The Colorado Water Plan overstates Colorado's projected population growth by saying 50 percent of the increase is from births by Colorado residents, amounting to 0.9 percent per year in the Hot Growth Scenario. The US Census Bureau projects that the average indigenous population growth in the United States will drop from 0.5 percent in 2015 to 0.2 percent in 2060. At that rate, only 14 percent of the Hot Growth projected population growth will come from indigenous births, with 86 percent of the population growth (3.9 million) resulting from in-migration. The average indigenous growth rate from 2015 to 2050 is only 0.3%, one-third of the rate projected by Colorado's state demographer. • The Shoshone and Cameo calls are essential to protect the health of the Colorado River. • Colorado is now using 100 percent or more of its share of the Colorado River, and there is no more firm yield available for diversion to the Eastern Slope. • Eliminating the water supply gap requires high conservation statewide, following the Southwest Roundtable's recommendation that 70 percent of municipal water use occur indoors and 30 percent outdoors. Colorado's Water Plan should acknowledge and promote this.

Public Comments from September 15, 2015 Metro Basin Hearing (Cont.)	
Source of Comment	**Summary of Comments**
Kristin Green, Conservation Colorado	• The Colorado Water Plan should include a more robust stretch conservation goal based on the high conservation goal identified in the Colorado River Basin Implementation Plan and the 2010 State Water Supply Initiative. • Water conservation should be maximized prior to pursuing other water supply options that impose more impacts. • Additional incentives should be developed to encourage water reuse, including an improved regulatory environment (as identified in Chapter 10 III b of the draft plan). • State endorsement of water projects should not occur prior to the release of a final environmental impact statement. This could marginalize the statement's findings.
Sonia Skakich-Scrima	• The Colorado Water Plan ought to acknowledge and address the projected impacts of climate change. Protection of water supply may not be possible if climate change becomes irreversible. Combating climate change will require leaving two-thirds of existing fossil fuels in the ground. • Hydraulic fracturing uses an unacceptable amount of water to extinction. It also increases the migration of methane gas toward surface water supply and the atmosphere. • Climate change ought to be the basis for the approach of regulatory bodies, including the committee, in water policy planning.
Larry Scrima	• Water should not be considered cheap or free. • Industrial users of water and other natural resources should adequately compensate for their use or lease of public resources. Industrial users should also be held responsible for cleanup of the sites they abandon.

Public Comments from September 15, 2015 Metro Basin Hearing (Cont.)	
Source of Comment	**Summary of Comments**
Anne Castle, Getches-Wilkinson Center at the University of Colorado A copy of Ms. Castle's written testimony is included in the September 15 meeting summary and available on the WRRC website.	• The draft Colorado Water Plan describes a large number of proposed action items, both inside and outside of Chapter 10. The action items in the draft Colorado Water Plan should be prioritized in order to promote a practical implementation strategy. • Significant funding will be needed in order to address water gaps, promote agricultural and environmental viability, and prepare for climate change. The Colorado Water Conservation Board ought to develop criteria to determine which projects receive funding and from which sources. • The Colorado Water Plan appropriately recognizes the key role of conservation in meeting Colorado's project water supply gaps, and the important corollary that no one sector can or should be relied upon to bear the entire burden of the projected conservation goals (Chapter 6.3). The plan should include the stretch goal of reducing projected 2050 municipal demand by 400,000 acre feet through active conservation (Chapter 10, Action III.a.4). • Without thoughtful scoping parameters, development of significant new Colorado River supplies increases the risk of future curtailment to all existing, post-1922 Colorado River water users, reduces the production of renewable hydropower at Colorado River Storage Project reservoirs, and could ratchet up unwelcome and counter-productive political dynamics among the Colorado River Basin States. The IBCC-developed Conceptual Framework mitigates these adverse effects of new water development on the Western Slope. The Conceptual Framework is a critically important part of the plan and should be formally adopted in the plan and by the Colorado Water Conservation Board, not just monitored (Chapter 10, Action VI.d.4). • The state must take a leadership role in developing meaningful alternatives that can help make some irrigation water available for other uses, but in a manner that benefits the agricultural economy in order to demonstrate its commitment to reducing the use of permanent water transfers to meet new consumptive use demands. • Legislation should be considered to recognize the right of a water rights owner to continued ownership, and the right to dispose of saved consumptive use. Such legislative recognition currently exists in Montana, California, Oregon, and Washington, and provides a secure foundation for farmers in particular to alter their usage of water without fear of loss. • While the Colorado River Water Bank Working Group and the CWCB's support for this group are mentioned in the plan (pages 196, 211-12), the plan should include a specific action item continuing this support and eventual implementation of a Colorado River water bank to reduce the risk of a compact deficit. The plan should also consider additional regional water banks created under CWCB guidelines to help facilitate more flexible response to drought situations and to manage the use of alternative transfer methods for the sharing of irrigation water.

Feedback on the Draft Colorado Water Plan (Cont.)

Public Comments from September 15, 2015 Metro Basin Hearing (Cont.)	
Source of Comment	**Summary of Comments**
Casey Davenhill, Colorado Watershed Assembly	• Basin roundtables are important for engaging the public in conversation about water management in the state. • The Colorado Water Plan should also promote public education and outreach for basin roundtable members to learn about the priorities of their local communities and to educate elected officials and special districts representatives about water matters. • The Colorado Water Plan should recognize that water supply planning for water quality and supply projects is a regional issue that requires collaboration among people with diverse perspectives and interests. • More funding should be available to offset travel and other expenses incurred by persons participating in basin roundtables, water districts, and other water meetings.

PUBLIC INPUT ITEM 169

LOWER SOUTH PLATTE WATER CONSERVANCY DISTRICT

100 BROADWAY PLAZA, SUITE 12 / STERLING, CO 80751 / PHONE 970-522-1378 FAX 970-522-0848

September 17, 2015

James Eklund
Director, CWCB
1313 Sherman Street, Room 721
Denver Colorado 80203
cowaterplan@state.co.us

Dear Mr. Eklund:

Thank you for the opportunity for the Lower South Platte Water Conservancy District (LSPWCD) to submit comments on the 2nd Draft of the Colorado Water Plan (CWP). Please see the attached table for our comments associated with specific sections within the 2nd Draft of the CWP. Please call (970) 522-1378 or email me at jmfrank@lspwcd.org if you have any questions regarding LSPWCD's comments.

Sincerely,

Joe Frank

Joe Frank,
General Manager

xc: LSPWCD Board of Directors

2nd Draft Colorado Water Plan	LSPWCD comments
Section 1. Introduction (Page 1 and 2) Text: *Bullet Points.*	These bullet points need to either be significantly revised or deleted. Statements such as "a blind hope that we can withstand more water diversions" and "water laws and administration are out of touch with our changing needs" are divisive and false. This Section may need to be rewritten as it should really focus on framing the path forward and on solving the issues and meeting the "gap", not opinions on what is wrong with Colorado's water system.
Section 2. Colorado's Legal & Institutional Setting (Page 8) Text: 3rd paragraph "*maximize the beneficial use of all the waters of the state."*	The 1969 Act specified both maximizing beneficial use and protecting vested water rights. Both need to be stressed whenever referencing the Act. Suggest revising to "maximize the beneficial use of all the waters of the state while protecting vested water rights."
Section 2. Colorado's Legal & Institutional Setting (Page 10) Text: 3rd paragraph, last sentence. "*In over-appropriated basins, new water uses may be created by changing existing water rights to new uses, or by developing augmentation plans to increase the water supply."* s	Capturing and storing water during times of excess flows should be added as a source of water. Suggest adding, ".... and storing available unappropriated water during times of excess flows to increase the water supply"
Section 2. Colorado's Legal & Institutional Setting (Page 11) Text: 4th paragraph, 3rd sentence.	Need to add "stored water or other available water supplies" to the list of augmentation supplies to replace out of priority depletions from well pumping.
Section 4: Water Supply – Role of Storage: Page 71-75: Text: All in general, specifically the last paragraph on page 72. "*new storage projects may be contentious and face numerous hurdles, including permitting and funding. In many cases, it may be more practical and efficient to reallocate or enlarge an existing dam and reservoir than to build a completely new structure."*	This Section seems to really focus on the role of existing storage and the opportunity to rehabilitate or enlarge existing storage while severely discounting the potential and opportunity to develop new storage. It is pointed out on page 72 and Fig. 4-11 and 4-12 that construction of new storage projects and new storage volume has flat lined over the last 30 years. However, the last paragraph of Page 72 explains constraints for not building new storage projects and instead suggests only reallocating or enlarging existing projects. This needs to be revised to state how important it is to develop "all" types of storage including new storage projects and rehabilitating existing projects by overcoming the existing hurdles

	that are out there if we are going to make any real progress in solving both the existing and future "gap."
Section 5: Water Demands – State Knowledge on Water Conservation: Page 81-85: Text: All in general.	This Section needs to note that there are limitations to active and passive demand reductions by individual municipalities as outlined by the SP BIP. Reductions in demand by one municipality may at times actually decrease supplies to other municipalities within the basin and simply redistribute the water supply gap. CWCB staff mentioned at the August SPBRT meeting that there would be an overall increase in return flows from municipal growth in the South Platte Basin. This may be true eventually but it is not due to conservation, rather new projects / new supplies that develop additional water. The key number in that presentation is that efficiency is expected to increase from 39% to 42% in the future which is a definite reduction in existing water supplies. These limitations and impacts should also be noted in Section 6 of the CWP.
Section 5: Water Demands – State Knowledge on Municipal Reuse: Page 85-86: Text: All in general.	Similar to above, this Section needs to note impacts to existing uses through municipal reuse as noted by the SP BIP. Reuse reduces the existing basin supply of water and at times redistributes the water supply gap. These limitations and impacts should also be noted in Section 6 of the CWP.
Section 5: Water Demands – Overview of Agricultural Needs: Page 87-88: Text: First paragraph.	A lot is made about how much water agriculture diverts and uses. It should be highly emphasized here and in other places that most of the water diverted and used by agricultural has already been used prior to agricultural use (ie; ag. relies heavily on return flows in basins like the South Platte and Arkansas). In addition, for example in the South Platte, the practice of agriculture and the return flows generated from irrigation have allowed the basin divert water multiple times annually and to use over two times the average supply of water entering the basin each year. This seems to be a hot topic recently that "if ag would just be more efficient we could reduce the water supply gap in the State." Total agriculture water use and later in Chapter 6, Ag efficiency should be clearer within the CWP.

Section 6: Water Supply Management Page 94: first paragraph: "*two avenues deserve special attention."*	Demand management strategies (conservation and reuse) and opportunities to share water between agriculture and other uses are highlighted immediately in Section 6 and then throughout the Section as "important" options to meet current and future needs. This seems to be the overarching theme with this version of CWP. Demand management, especially through municipal conservation seems to be stressed as the priority solution to meeting Colorado's water needs, while the need to successfully implement planned projects and the need to develop new storage projects seems to be of much less importance in the CWP. We also believe that the true (net) basin and statewide water supply generated from municipal water efficiency (conservation and reuse) is overestimated by the CWP because of a reduction in base water supply. This overestimation will create the need for other future water supplies that will come primarily from irrigated agriculture in the South Platte basin. Demand management is an important piece to solving the M&I gap as are all other solutions.
Section 6.1: – Scenario Planning… Page 94: last paragraph:	Need to include additional storage projects under long term solutions in this paragraph and throughout Section 6.1 and even through Section 6 as a whole.
Section 6.2: Meeting Colorado Water Gaps South Platte / Metro / Republican – Ag gap- Page 134 – "*The South Platte BIP reexamined potential loss of irrigated lands in the South Platte Basin based on past trends, and indicated a range of 10 to 20 percent for the South Platte Basin."*	Not sure where this came from the SP BIP? In addition, the CWP only states the SWSI 2010 potential decrease of 22 to 32 percent. The SP BIP status quo scenario of no other solutions indicates a reduction of irrigated agriculture of 50% in the SP. It needs to be pointed out the severity of status quo to SP agriculture.
Section 6.3: Water Conservation and Reuse Text: All in general	Conservation rises to the highest priority in the CWP for solving the water needs of the State. Immediately in Section 6.3.1 (Municipal Water Conservation) on page 158 "*Every conversation about water should start with conservation,"* sets the tone for placing conservation as the key component in

Section 6.3: Water Conservation and Reuse Text: All in general (cont'd).	solving the water needs of the State. Conservation and efficiency are extremely important to meeting the water needs of this State, but it can't be put in a position to rise above other solutions as it appears currently in the CWP.
Section 6.3.1: Water Conservation and Reuse Text: Pages 164 and 165. IBCC Conservation Subcommittee – stretch goal.	While recent improvements to this section have been made by the IBCC, the current concept of a municipal conservation stretch goal may be misleading and may produce unintended consequences. It has been admitted that the stretch goal is an aspirational goal and that the 400,000 ac-ft is strictly a hoped for with many difficult tasks to implement for success. The State will now look at planning efforts associated with moving towards the "stretch goal" as one of the components to be considered to achieve State endorsement and funding. While not a direct requirement it is very realistic that if municipal water providers can't reach high conservation standards through BMPs then they will be forced to turn to further "buy and dry" of irrigated ag. Finally, there are no other solutions to meeting the M&I gap that recommend a "stretch goal". Either all solutions should have a stretch goal or none of them should. This once again demonstrates the bias of placing conservation as the priority solution.
Section 6.3.1: Water Conservation and Reuse Text: Pages 169. South Platte/Metro – Text.	Section 4.3.1.7 of the South Platte BIP (directly under Table 4-9) discusses the impacts from future conservation on other water users and in essence often "re-allocating" the gap. This is similar to SP BIP language that discusses the impacts from municipal reuse. The CWP mentions the SP BIP concerns with impacts from reuse but makes no mention of the SP BIP concerns with impacts from municipal conservation. These concerns should be added under this section of the CWP.
Section 6.3.4: Agricultural Conservation, Efficiency, and Reuse Text: All in general and specific Page 194.	This Section states correctly (which should be highlighted) that increased irrigation efficiency does not increase any new water and in fact may decrease available water as

Section 6.3.4: Agricultural Conservation, Efficiency, and Reuse Text: All in general and specific Page 194.	it increases on farm consumptive use and decreases return flows in water short systems. When advocating for reduced diversions to benefit in stream flows the CWP should on page 194 should make sure to note that existing senior irrigation water rights can't be expanded by continuing to call for water and leave a portion of their water in the stream due to efficiency improvements resulting in injury to existing water rights due to such an expansion. Primarily, proper administration should be stressed to ensure that injury to vested water rights is avoided.
Section 6.5: Municipal, Industrial, & Agricultural Infrastructure Projects & Methods. Text: All in general	This Section should be much stronger on 1) the importance of successfully building all planned infrastructure projects and 2) the importance to develop and build new storage and infrastructure projects. Both the South Platte / Metro and the Arkansas BIPs stress the importance of new storage projects to meet the future water needs of their basins. The South Platte and Arkansas basins are where the majority of the Statewide gap exists which should prompt the CWP to also make new storage a high priority. New storage should also be added to Section 10 as a Critical Action.
Section 10: Critical Action Plan Text: Page 399 and 400. II. e. Promote Additional Storage and Infrastructure	Need to add a critical action to promote local and regional storage and infrastructure projects that both divert and retain native unappropriated waters where feasible and store water supplies from other methods outlined in the CWP to meet existing and future water needs. New local and regional projects should be multiple use and multiple benefit projects to the greatest extent possible.

PUBLIC INPUT ITEM 170

CENTENNIAL
WATER AND SANITATION DISTRICT

September 17, 2015

James Eklund
Director, CWCB
1313 Sherman Street, Room 721
Denver Colorado 80203
cowaterplan@state.co.us

RE: Comments on 2nd Draft of the Colorado State Water Plan

Dear Mr. Eklund:

Centennial Water and Sanitation District is submitting these comments on the 2nd draft of the Colorado State Water Plan (SWP). Centennial appreciates the opportunity to submit these comments and respectfully requests that they be carefully considered by the Colorado Water Conservation Board (CWCB) in deliberating and preparing the 3rd and final version of the SWP.

Centennial was formed in 1980 as a utility enterprise for the purpose of providing water and wastewater service to the 22,000-acre Highlands Ranch master-planned community located south of Denver in northern Douglas County. Water and wastewater services are provided through a wholesale service agreement with the Highlands Ranch Metropolitan District (HRMD). HRMD in turn retails those services to the end users – the property owners. In providing water and wastewater services to the Highland Ranch community, Centennial works closely in cooperation and collaboration with its neighbors.

Centennial reviewed the detailed comments to your office on the 2nd draft of the SWP from the South Metro Water Supply Authority and the Metro Roundtable, and agree with their respective analyses, endorses their requests and comments, and includes them herein by reference. In particular, Centennial believes that the SWP will not achieve full success if conservation is viewed as the keystone of the Plan. More storage, particularly on the east slope of the Continental Divide, is needed. And, creative ways to bring more west-slope water to the east slope should be explored in a manner that also benefits west-slope interests.

Much that is written in the 2nd draft of the SWP seems to have a dual premise that (1) water conservation is not a serious priority for municipal water providers on the east slope of the Continental Divide, and (2) that conservation is the primary solution (with the so-called "*conservation stretch goal*") to solving the projected long-term water-supply shortage. Great strides in water efficiency and conservation have been accomplished by the various municipal members of the South Metro Water Supply Authority through individual initiatives and regional cooperation that seem to have been ignored and should be recognized and applauded for their successes. For example, early in the development of Highlands Ranch, Centennial relied heavily on nonrenewable nontributary Denver Basin ground water that was supplemented with available surface water. Over time and through strategic planning, carefully-crafted water right decrees, cooperation and collaboration with its neighbors, and perseverance, Centennial developed a robust municipal conjunctive-use system that is the envy of many and a model for others as

62 West Plaza Drive
Highlands Ranch, Colorado 80129
www.highlandsranch.org

303-791-0430 Telephone
303-791-0437 Engineering Fax
303-791-3290 Financial Services Fax

envisioned in the 2nd draft of the SWP. This conjunctive-use system includes in-basin surface water, ground water, reuse, surface water storage, underground storage, and innovative conservation.

Today, Centennial provides potable water services to the citizens of Highlands Ranch and other neighboring communities in northern Douglas County. The District currently serves about 19,000 acre-feet per year to its customers using various water facilities including the South Platte River and its tributaries located in Water Division 1. The District uses a combination of surface water, tributary alluvial groundwater, nonrenewable nontributary Denver Basin groundwater, and leased water for use within its service area. But, Centennial uses its surface water and tributary groundwater rights to preserve and reduce its reliance on its nonrenewable nontributary Denver Basin groundwater. Today, nearly 90% of Centennial's annual water supply is from renewable surface water supplies, nearly 50% of Centennial's annual water supply is reusable, and most of this reusable water is in fact reused. In wet years, Centennial can sometimes divert almost all of the water it needs from surface water supplies.

Centennial diverts surface water from the South Platte River through ditches that deliver water through the Chatfield Reservoir outlet manifold. Water diverted through these ditches by the District is stored in Centennial's nearby South Platte Reservoir and Englewood's McLellan Reservoir. Water from those facilities is then delivered to Centennial's Joseph Blake Water Treatment Plant, which is located south of McLellan Reservoir. . Centennial has a storage reservoir in South Park, upstream of Chatfield Reservoir, and is also a major participant in the Chatfield Reallocation project, which is intended to provide the District with the ability to store its surface water in Chatfield Reservoir.

Centennial has about 50 Denver Basin wells completed in the Denver, Arapahoe, and Laramie-Fox Hills aquifers, which supply a portion of its water supply. Ground water pumped from these wells is nonrenewable and nontributary except for water that is stored in the aquifers through the District's aquifer storage and recovery system. To date, Centennial has stored about 14,000 acre-feet in three of the four Denver Basin aquifers beneath Highlands Ranch. Centennial is also a participant in the Water Infrastructure Supply Efficiency (WISE) project, whereby the District will receive an interruptible supply of 1,000 acre-feet of reusable WISE water from Denver and Aurora.

Centennial also has a dynamic and successful water efficiency and conservation program that currently saves about 5,000 acre-feet per year without conservation. This program includes dedicated full-time and part-time staff, strict rules and regulations for landscaping and irrigation, toilet and rain sensor rebates, comprehensive landscape irrigation audits, strict water-use budgets, conservation kits, Xeriscape demonstration projects, and an aggressive irrigation contractor certification program.

Just as storage (surface and underground) is a keystone of Centennial's water-supply success, storage (not conservation) must be the keystone of the SWP. The need for additional storage in the South Platte River Basin is why the Chatfield Reallocation Project is a top priority to the Project participants and the State of Colorado. But, much can be learned from the Chatfield Reallocation Project, which has taken more than 21 years to obtain the various state and federal approvals and contract agreements. The CWSB should, in cooperation with the various Project participants, seize the opportunity in the near future to critically evaluate how this laborious process can be streamlined to save time and reduce costs. .

Again, Centennial appreciates the opportunity to review and comment on the 2nd draft of the SWP and will gladly participate in any organized and objective review of the Chatfield Reallocation Project permitting and agreement process in cooperation with the CWCB.

Sincerely,
Centennial Water and Sanitation District

John M. Kaufman
General Manager

PUBLIC INPUT ITEM 171

DENVER WATER

1600 West 12th Ave
Denver, CO 80204-3412
303.628.6000
denverwater.org

September 17, 2015

Colorado Water Conservation Board
1313 Sherman Street, Room 721
Denver, CO 80203

RE: Comments on Colorado's Water Plan

Dear Board Members:

Introduction

The development of the Colorado Water Plan (Plan) has sharpened Colorado's focus on water issues. Denver Water supports this effort and recognizes that water suppliers face significant risks in their efforts to provide the water essential to people, agriculture, the environment, and economic activity.

Given the challenges Denver Water, the region, and the state face, the time has come for the Colorado Water Conservation Board (CWCB), Colorado's policy makers, and water users to look past the limitations of our previous thinking and usher in a new era in water policy and practices that will serve Coloradans well for the next hundred years. It is imperative that we move away from moral judgements about water use and develop a framework for more holistic management of our precious water resources. This goal is achievable, but it will require a paradigm shift in the way we think about our water. To this aim, Denver Water's comments on the second draft of the Plan are focused in six areas.

Specifically, the Plan needs to:

1. Be realistic about implementation of the Critical Action Plan described in Chapter 10 and the associated funding.
2. Set an aggregate statewide efficiency goal by a date certain and articulate a path to achieve it.

3. Implement flexible means to share water across sectors while protecting agriculture, recreation and the environment.
4. Set in place a plan to streamline permitting for needed infrastructure that is already being planned.
5. Require planning for growth that is sustainable and plans for climate change.
6. Articulate actions that will promote watershed health and environmental resiliency.

1. The Plan needs to be realistic about implementation of the Critical Action Plan described in Chapter 10 and the associated funding.

The Critical Action Plan needs to be specific and tied to measurable outcomes. The essential problem for Colorado remains how we are going to accommodate a doubling of our population by 2050, foster our agricultural economy, and protect and improve our environment and recreation, all in the face of a warming climate. The Plan projects large water supply gaps for Colorado. If we are going to close these gaps, the Critical Action Plan needs to be framed in a way that will allow us to achieve these objectives. Overall, Chapter 10 is long on concept and short on detail.

The Critical Action Plan needs to be endorsed and implemented by the Governor, all relevant state agencies and, where applicable, the Legislature. The Plan is not as powerful coming solely from the CWCB. We recommend that the Governor issue an Executive Order that outlines what activities can be done today and which need additional resources to achieve. The Governor should also voice support for the development of all four legs of the stool as discussed in the Statewide Water Supply Initiative (SWSI) 2010. Conservation alone will not be enough to close the gap. Additional storage will be required to allow us to manage water efficiently and for multiple benefits.

Summary recommendation 1: Endorsement of Critical Action Plan by all relevant state agencies and the Legislature where applicable.

Summary recommendation 2: Governor to issue an Executive Order that outlines what activities can be done today and which activities need additional resources to achieve.

Summary recommendation 3: Governor voices support for an "all in" approach which includes development of all four legs for the stool plus storage.

The CWCB needs to be realistic about funding and capacity. The Critical Action Plan leads off with funding, endorsing broad funding initiatives like a container fee ballot initiative, green

bonds and loans, state tap fees on water use, property taxes on the Front Range, and a host of others. Yet it does not specify exactly what all this money would be used for. A lesson was learned several years ago when every county in the state voted down a water funding initiative that did not specify exactly how the funding would be used.

Many of these funding ideas are unrealistic in today's political environment. For example, we have a critical problem with 1-70, yet there is no appetite in the state to generate the funding needed to address that challenge. The same can be said for education. Moreover, municipal water utilities (which serve over 80% of the state's population), including those in the Denver metro area, Colorado Springs and Pueblo, all pay their way through rates and debt. Statewide or regional funding either isn't necessary for them, or their customers would essentially pay twice, including for projects that don't benefit them.

Additionally, the Critical Action Plan specifies many actions by the CWCB that would require either direct general funds, expansion of authorities, or the addition of capacity to accomplish. The Critical Action Plan should realistically assess funding and capacity in order to prioritize and implement measures that will achieve actual results.

Summary recommendation 4: Identify and prioritize very specific funding needs, don't chase unrealistic funding sources, and have a plan that works under a more modest funding scheme.

2. The Plan needs to set an aggregate statewide efficiency goal by a date certain and articulate a path to achieve it.

In the second draft of the Plan, specific conservation targets are mentioned only with respect to municipal water use. Municipal water utilities serve over 80% of the state's population, yet use only 7% of the state's water supply. Moreover, municipal water utilities, particularly those on the Front Range, have had long-term commitments to conservation and have consistently achieved results. Denver Water, for example, has spent about $100M on conservation measures over the last twenty years, saving nearly a million acre-feet of water.

The Critical Action Plan needs to articulate specific actions that will reduce demands across the state, and across all sectors of water uses. The Denver Metro Chamber of Commerce endorsed a statewide goal of a 15% reduction in state water use by 2050. We think this is a modest goal – but achieving it would represent closing the water supply gap. From a municipal perspective, reducing demands can be achieved by increasing efficiency – reusing water supplies whenever

possible, capturing and utilizing rainwater, and managing and treating stormwater through urban landscapes.

Setting a goal of efficiency in all water use, without losing the value that comes from the water use, will help to maximize our water resources and advance many objectives in the Plan. Water used for recreation, industry, agriculture, and the environment all have their own set of water efficiency opportunities that need to be explored and pursued. Increasing efficiency is the best way to achieve the Plan's three primary values. Failure to do so will hasten the economic forces for transferring water out of lower market value uses into higher market value uses. Where we can, we should attempt to avoid the unintended consequences that can come with this approach. Our best hope of minimizing new agricultural water transfers and new transbasin diversion projects is to adopt a conservation and efficiency ethic that applies to all uses of water.

Summary recommendation 5: Set an aggregate statewide efficiency goal for all water uses by a date certain and articulate a path to achieve it. Promote the concept that all water interests sharing in statewide efficiency is our best hope for meeting the Plan's three primary values and for avoiding new agricultural water transfers and new transbasin diversion projects.

The assumption and tone of the Plan that municipal use (particularly the roughly 3% of the state's water use that supports urban landscaping) is somehow wasteful or less valuable than other uses of water needs to be removed and replaced with language that is respectful of all uses of water that are done in an efficient manner. Water efficiency does not mean doing without or giving up the value created by water use. It is not a reduction in value. It doesn't mean selecting which are the most important uses of water to the detriment of other uses. It means using the least amount of water needed to maintain the value obtained from the water. As urban water providers develop programs to find greater efficiency of municipal water use, it's critical that the Plan not thwart that effort by suggesting to our customers that the real goal of municipal conservation is to reduce or eliminate the value they receive from water.

This tone can be seen throughout the document. For example, bullet points 2 and 4 of the fourth paragraph of page 1 of Chapter 1 can be read as being critical of those values that the overwhelming majority of Coloradans receive with their water use. That language assumes we need to continue to make difficult trade-offs between uses of water. The perspective reflected in these bullets should be replaced with a concept in which the state aggressively pursues efficiency in all uses of water in order to gain more benefits from the state's resources and to minimize the difficult trade-off in selecting between water uses.

The Plan discusses the benefits of irrigated agriculture including the value of open space. There are also benefits to irrigation of urban landscapes including important economic and environmental values of air and water quality benefits, cooling, shading, reduction of energy use, stormwater management, increased property values, recreational opportunities, and green space for urban dwellers (including low income families may not be able to afford the costs of living and recreating in other parts of the state). The values from Coloradans' uses of water need to be impartially explained in the Plan in an effort to appreciate all of those values. Moreover, actions must be identified so Coloradans can continue to receive all those values now and in the future.

Urban water use represents only 7% of the state water consumption but supports roughly 80% to the state's economy. Viewed in this light, the economic efficiency of urban water is extraordinary. The Plan should not denigrate municipal water use and instead should fully explain and embrace the economic efficiency of urban water use as a tremendous asset of the state.

Summary recommendation 6: *Remove and replace the anti-municipal water use language. Impartially explain Coloradans' uses of water in an effort to appreciate the values received by all of the state's water users and uses.*

Summary recommendation 7: Explain and embrace the economic efficiency of urban water use as a tremendous asset of the state.

3. The Plan needs to implement flexible means to share water across sectors while protecting agriculture.

The Plan puts a focus on stemming the tide of buy and dry, however, reforms to state water law are needed to encourage flexible arrangements between agricultural and municipal sectors. The Critical Action Plan should establish a process to propose meaningful reforms to state administrative policies and water law that will create the kind of flexibility needed to allow innovative water sharing arrangements to take place. Several previous efforts that have been aimed at streamlining the water court and water administration process to get more projects in practice have had little practical effect thus far. By taking a more interconnected and collaborative approach, we can create a new interface between municipal and agricultural interests that would protect significantly more agricultural land than would our current trajectory.

The CWCB should identify potential water resource sharing arrangements between agricultural users and municipal water providers that would provide water for municipal growth while sharing periodic excess municipal supplies with agricultural users. This could be combined with financial payments from municipal water providers to increase the financial stability of irrigated agriculture.

Summary recommendation 8: The CWCB should identify potential water resource sharing arrangements between agricultural users and municipal water providers that would provide water for municipal growth while sharing periodic excess municipal supplies with agricultural users. This could be combined with financial payments to increase the financial stability of irrigated agriculture.

We do believe the best way to encourage and manage Alternative Transfer Methods (ATMs) is through the legal system reforms and the project identification efforts described above. We are concerned that adding another layer of regulation to water transfers as proposed in Action IV,a,2 will serve to accelerate the traditional buy and dry of agriculture in ways that do not serve the greater interests of the basin or of the private property holders of water rights. Therefore, we oppose regulatory efforts that might discourage rather than incentivize beneficial sharing of water across water use sectors.

Summary recommendation 9: Remove Action IV,a,2 as it has the potential to adversely affect mutual beneficial sharing of water across sectors.

At the basin level, there may be an opportunity to become more efficient with the management of agricultural return flows in ways that do not reduce or injure supplies of other users in the basin and that create net environmental and recreational benefits. Increased management of agricultural return flows could be a component of a basin water management plan that combines various resources including 1) agricultural returns, unused reusable supplies and unallocated water, 2) existing water system capacities and storage, 3) alluvial and deep ground water storage capacity and 4) new storage, conveyance and water treatment facilities for the greater benefit of basin water interests. We owe it to the future of Colorado to seek out important synergies of water use efficiencies that might be gained through collaborative basin water management plans. We might be able to make our water pie much bigger than we can by continuing to manage our water systems and resources independently.

Through the development of their Basin Implementation Plans, the basin roundtables have learned a lot about the needs and resources in their basins. We believe an important next step in the roundtable process is to provide WSRA funding for basins to explore opportunities for

meeting needs and expanding water resources benefits through collaborative basin water management plans as described above. Unfortunately there was not the time or emphasis for this task in most of the BIPs.

Summary recommendation 10: A portion of the WSRA funding should be allocated for basin roundtables to explore collaborative basin water management opportunities to make the most of existing water systems and water resources along with new facilities to help meet the current and future water needs and interests of the basin. These basin water management plans should be designed to help meet the aggregate statewide efficiency goal described in summary recommendation 5.

Colorado River Compact compliance requirements and Colorado River operational challenges resulting from prolonged drought conditions within the Basin threaten the certainty of the state's Colorado River water supplies. The CWCB should continue to support the exploration of a voluntary, compensated water banking program that helps to maintain the viability of West Slope agriculture while helping to protect critical water uses from drought curtailment under the Colorado River compact. Extend operations of Colorado River Storage Project (CRSP) Reservoirs to move Water to Lake Powell in low reservoir conditions, together a demand management program needs to be developed for the Upper Basin of the Colorado River to avoid involuntary curtailment of water uses and to protect the East Slope's ability to make full use of reusable water. Avoiding curtailment will help protect west slope agriculture, whose junior rights would be curtailed, from buy and dry by municipalities on both slopes. An administrative protocol should be designed through a stakeholder process to achieve required curtailment levels and maintain our obligations under the Colorado River Compact should conservation programs or other voluntary curtailment programs fail to achieve necessary results. Definition of this administrative protocol is needed so that potentially affected entities can plan alternative courses of action in response to such an eventuality.

Summary recommendation 11: The State should finish development of a CRSP extended operations and a demand management program for the Upper Basin of the Colorado River to avoid involuntary curtailment of water uses. This program should be finished in time to provide the needed certainty of supply for projects that would increase the reuse of Colorado River supplies on the east slope. The State should also finish developing an administrative protocol designed to achieve required compact compliance levels should demand management programs or other voluntary curtailment programs fail to achieve necessary results.

4. The Plan needs to set in place a plan to streamline permitting for needed infrastructure that is already being planned.

The State should accelerate the path to construct needed infrastructure. Denver Water supports the State's effort to streamline the permitting process and the proposed Lean activities for the process. The goal of the Lean effort should be to formulate guidelines and regulations that would improve the efficiency and effectiveness of State involvement in the various state and federal permitting processes.

Denver Water is not supportive of State endorsement of water projects. This would add another step in an already constipated process. We recommend that the Governor issue a statement that he is supportive of reasonable development of water projects that are supported by the four legs of the stool and those that provide multiple benefits to Colorado's water values.

We are also supportive of the IBCC's Conceptual Framework for the development of transbasin projects but caution the state against attempting to sequence the four legs of the stool by requiring conservation as a requirement and caution against creating the municipal conservation stretch goal as it can be seen as a priority or superseding goal that puts conservation ahead of other important efforts like developing the water systems needed to reach higher levels of water conservation and reuse. Rather than ignoring or downplaying other options, we need a state water plan that adheres to the "all in" approach that makes best use of all the resources the state has for meeting the three primary goals of the Plan.

Another concern related to the need to accelerate the path to construct needed infrastructure is the emphasis in the Plan on the stretch conservation goal for municipalities. The stretch municipal conservation goal is meant to be aspirational and as such should absolutely not be used in any sort of regulatory role by state or federal permitting agencies. To avoid this deleterious effect on needed water infrastructure, the concept of the municipal conservation stretch goal needs to be replaced with a return to the "all in" approach that makes best use of all the resources available to the state. The critical action plan needs to be consistent with the three primary goals of the Plan and should contain an attainable aggregate statewide efficiency goal for all water uses by a date certain and articulate a path to achieve it.

The two methods that CWCB staff has used for attempting to quantify the municipal conservation stretch goal have not been understood or accepted by the municipal water conservation professionals whose utilities are the target of this goal. Until the CWCB staff can provide a defensible basis for the quantification of the municipal conservation stretch goal and has vetted that through the CWCB's Conservation Technical Advisory Group and the practicing conservation experts at water utilities, there should be no quantification of a municipal conservation stretch goal in the Plan.

It is unreasonable to assume that we can close our future water supply gaps with municipal conservation alone. Denver Water serves almost a quarter of the State's population using less than 2 percent of all the water used in Colorado. Even if we eliminated all outdoor water use (approximately half of our total water demands), we would only make a 1 percent change in the State's water usage.

Summary recommendation 12: Use Lean techniques to streamline water project permitting process.

Summary recommendation 13: Do not establish a state endorsement program for water projects.

Summary recommendation 14: Remove the municipal water conservation stretch goal in favor of an "all in" approach that makes best use of all the resources the state has for meeting the three primary goals of the Plan and set a reachable aggregate statewide efficiency goal for all water uses by a date certain and articulate a path to achieve it.

5. The Plan needs to require planning for growth that is sustainable and plans for climate change.

As population increases in the State, the way we develop and re-develop to accommodate growth can have a major impact on water use. Land use decisions can commit water for decades and can involve everything from the type or amount of landscape to the efficiency of water-using fixtures we choose to install. Opportunities to achieve water use efficiency may be achieved more easily and cost effectively while land is being developed or re-developed.

Higher density developments can reduce water use. Multifamily housing, on average, uses significantly less water than single family housing. The state should provide land use planners with information on the water saving advantages of higher density development and other land

use methods. These land use methods should be incorporated where they are consistent with local community goals and values.

The state has a role to play in helping remove barriers where local communities and the housing market support high density development. We recommend that a toolbox of options be developed through a stakeholder process such as the Water and Growth Dialogue and the Land Use Leadership Alliance projects. This toolbox should designed to provide guidance for community master plans, codes, regulations, and zoning that would increase water use efficiency while being consistent with community values and goals.

Summary recommendation 15: The State should provide support for the development of a toolbox of options designed to provide guidance for community master plans, codes, regulations, and zoning that would increase water use efficiency while supporting community values and goals.

A promising tool for the toolbox may be the adoption of a "One Water" approach. Coordination between water providers, wastewater system operators and storm water managers may allow for the adoption of a more holistic program of water management across the entire urban water use cycle. This "One Water" approach would apply to the state's regulation and management of all urban water sources - storm water, waste water, water supply and water reuse. The adoption of this "One Water" approach would have to occur without injuring water rights.

Summary recommendation 16: The State should provide funds for identification of One Water opportunities for urban areas to best manage and use local water resources without injuring water rights. This process should include identification of barriers and recommended actions for the state to help remove those barriers without injury to water rights or without compromise of health, safety and water quality goals.

Climate change needs to be taken seriously and incorporated into the Critical Action Plan. Climate change can drastically affect everything related to water in Colorado – from supply and demand for cities and farms, to the snowpack and rivers we recreate on, to the security of our Colorado River supplies. Climate change will affect more than just supply and demand – it will alter water quality, timing of snowmelt, ecological systems and watersheds, and the frequency of extreme weather events. Yet, current legislation and regulations are built upon the assumption of climate stability. Reform is necessary to build flexibility for a changing natural system.

We recommend that climate change be explicitly assessed and explained in all of the analysis, estimates and projections in SWSI 2016. This needs to go well beyond the simple evaluations of municipal supplies to include evaluation of all of the state's hydrology, water systems and water uses. A Climate Change Task Force consisting of climate science and water interests should be created to advise the CWCB on the climate assessment and explanation in SWSI 2016. And the taskforce should also advise the basin roundtables on how to incorporate climate change into the Basin Implementation Plans and activities.

Summary recommendation 17: The State should create a Climate Change Task Force to inform SWSI 2016. Use this Task Force to advise basin roundtables on how to incorporate climate change into the Basin Implementation Plans and activities.

6. The Plan needs to articulate actions that will promote watershed health and environmental resiliency.

The Plan needs to articulate specific objectives in watershed and river health, and outline a clear plan of implementation. We've seen catastrophic fires in our state, fueled by the combined impacts of beetle kill and climate change. The health of our watersheds is vital to the sustainability of our water supplies. Denver Water is investing significant sums, in partnership with the US Forest Service, in forest health. Through the Colorado River Cooperative Agreement, we are investing in healthy rivers in Grand and Summit Counties. The State needs to prioritize watershed partnerships and watershed health initiatives. There is also an opportunity for the State to provide funding for projects that yield multiple benefits.

Summary recommendation 18: The State needs to prioritize and help fund watershed partnerships and watershed health initiatives that provide multiple or basinwide benefits.

Conclusion

The last few years have seen unprecedented work, dialogue and consensus-building among water leaders from across the state through the IBCC and basin roundtable process. As a result, Colorado's first Water Plan has been produced. While this progress in encouraging, much more must be done to create a viable long-term future that meets the State's and Denver Water's goals. We are concerned that the parochial approach of some basin roundtables may erode our ability to work collaboratively. It is imperative that the State works to steer the efforts of the basin roundtables and their funding towards more statewide collaboration.

Denver Water stands ready to help solve these challenges. We are striving to do our part in the areas that we directly control. On a broader regional and statewide basis, it is time to move beyond just conversation to acts of leadership when it comes to the interrelated matters upon which Denver's and Colorado's water futures rest.

If we do this right, together we can manage our vital water resources in ways that will secure Colorado's future, protect the environment, and keep this state economically competitive and strong. Denver Water is committed to be a positive partner and leader in this process.

Sincerely,

James S. Lochhead
CEO/Manager

cc: James Eklund, CWCB
Becky Mitchell, CWCB

PUBLIC INPUT ITEM 172

Lower Arkansas Valley WATER CONSERVANCY DISTRICT

Serving Bent, Crowley, Otero, Prowers and Pueblo counties

17 September 2015

Via email to: cowaterplan.state.so.us

James Eklund, Director
Colorado Water Conservation Board
1313 Sherman Street, Room 721
Denver, Colorado 80203

RE: Comments on Second Draft, Colorado Water Plan

Dear James:

The Lower Arkansas Valley Water Conservancy District (Lower Ark) is pleased that the Second Draft of the Colorado Water Plan continues to warn against the magnitude of agricultural "buy-and-dry" that will result from a continuation of a business-as-usual approach to meeting the State's 2050 water demands. Lower Ark is also pleased that the Plan supports so-called ATMs – alternative transfer methods – to minimize the permanent dry-up of irrigated land.

As you know, Lower Ark was instrumental in the creation of the Lower Arkansas Valley Super Ditch. The Lower Ark and Super Ditch are leaders in ATMs, having formally proposed three ag to municipal fallowing leasing projects in the last four years. The latest, the Catlin Pilot Project, began delivering water – up to 500 acre-feet - to the Town of Fowler, City of Fountain, and Security Water District this March. This Project succeeded where an earlier effort did not because of the innovative framework established by HB 13-1248, which empowers the CWCB as Colorado's lead water policy body to approve pilot ag fallowing-municipal leasing projects, like the Catlin Pilot Project. While this is a landmark step forward to establish ATMs as viable alternatives to buy-and-dry, it's a small step towards avoiding the dry up of up to 700,000 acres of irrigated land by 2050 forecast by SWSI and cited in the Plan. That fear is not misplaced; on June 15th the Town of Firestone solicited proposals for 3,000 to 5,000 acre-feet of irrigation rights. Colorado must do more to turn away from business as usual, and the Plan is the best and immediate opportunity to do so. Lower Ark believes it is critical that the Plan serve as a call to action by proposing specific action items that can be taken to help meet the State's future water demands.

LAVWCD recommends that the Plan include the creation of a Colorado Water Bank to facilitate temporary transfers of irrigation water to other uses. The Colorado Water Bank would build on

the success of the CWCB's Fallowing-Leasing Pilot Program, the State Engineer's expertise in modeling water rights, and California's successful drought water bank of the 1990s. Out of respect for private property rights, the program would allow owners of irrigation water rights to volunteer their rights for temporary use by others. Irrigators interested in leasing would quantify the amount of their water rights available for lease (historical consumptive use) and obligations to avoid injury to other water rights (return flow) using a State spreadsheet-based model adopted by the State Engineer through a formal rulemaking in water court. An irrigator could offer some percent of their water to the Colorado Water Bank, through which other users could contract to use the banked irrigation water for other purposes. The CWCB would initially establish and operate the Bank under rules adopted by the Board and approved by water court. Water conservancy and conservation districts could operate banks in their areas after a demonstration period under the CWCB. Leases would be limited to 3 out of any 10 years, or 30% on a rolling 10-year average, to sustain productive agricultural operations and rural economies and communities. The premise of the Water Bank is that it would be simpler, faster and cheaper than going to water court for a permanent change of water right, and thus facilitate water sharing between ag and other users in preference to permanent buy-and-dry.

LAVWCD also recommends that the Plan include creation of a $20+ million/year watershed health funding program. As you know, there are almost as many organizations and reasons to protect, restore and improve watersheds, as there are watersheds in Colorado. The State should empower and support the creativity and energy of these watershed and water organizations to undertake any viable project they are willing to tackle. Accordingly, the State should integrate and expand existing watershed-related programs to provide matching funds to support local efforts of any kind to protect, restore, or improve watersheds for water supply and environmental goals, such as forest treatment, post-fire or post-flood restoration, stream morphology, riparian and wetland improvements, etc. Non-profit watershed and environmental groups should be eligible, as well as local public entities. HB 15-1380 embodies the concept.

Thank you for your consideration. LAVWCD looks forward to the Final Draft of the Colorado Water Plan, and working with you, your staff and the CWCB to implement these ideas.

Sincerely,

Jay Winner
General Manager

PUBLIC INPUT ITEM 174

Town of Berthoud
328 Massachusetts Ave.
P.O. Box 1229
Berthoud, CO 80513
970.532.2643

September 17, 2015

Via email to: cowaterplan@state.co.us

James Eklund
Director, CWCB
1313 Sherman Street, Room 721
Denver, CO 80203

Dear Mr. Eklund:

As Town Administrator of the Town of Berthoud, I would like to thank you and everyone who has worked on the Second Draft of the Colorado's Water Plan ("Second Draft"). The Town of Berthoud is keenly interested in the State Water Plan as an important step in writing the next chapters of Colorado's water future. I have also reviewed the South Platte Basin Roundtable and Metro Roundtable joint comment letter ("BRT Letter") concerning the Second Draft, and agree with and support the detailed comments made therein. I encourage you to carefully consider each of the recommendations made in the BRT Letter in revising the Colorado Water Plan.

In reviewing those specific and detailed comments, several themes emerged that are important to the Town of Berthoud as it plans to meet its future water needs. The first of those is that the State Water Plan should truly be an "all of the above" plan, not valuing one solution above others.

Specifically, Berthoud believes that water storage projects, whether new projects or rehabilitation of existing reservoirs, deserve an equal place among the mechanisms for meeting the future water supply gap, especially as storage will be used in combination with other strategies. Reservoirs allow water to be stored in wet years and carried over from year to year to provide communities with necessary drought protection. Storage also allows retiming of available water supplies to meet summer water demands when supply is limited and demand is highest. Accordingly, Berthoud agrees with the BRT Letter that storage deserves additional analysis and emphasis, and deserves to be located in a dedicated section of the State Water Plan.

As you know, municipal water resource planners use long-term projections for population growth. Complex water supply projects require significant financial investment and go through lengthy state and federal permitting processes long before they produce water for the end water users. If Colorado is to be successful in meeting the future water supply gap, significant efforts should be made to simplify and streamline these permitting processes and to provide funding to water users for water supply planning and water projects at all phases. Any such funding should also be available for a diverse set of projects and to communities of all sizes.

Finally, Berthoud believes water conservation is an important aspect to meeting local and statewide water goals, but agrees with the BRT Letter that conservation alone is not a solution, and should not be elevated above other strategies for meeting the State's water supply gap. Berthoud also cautions against adopting statewide, one-size-fits-all, conservation targets; such targets may not be realistic for all communities and setting impossible goals may discourage communities from taking aggressive conservation steps. Further, conservation targets should not be a precondition for state permits or financial assistance.

Again, I appreciate the opportunity to provide these comments and please do not hesitate to contact me if you would like to discuss further.

Respectfully submitted,

Micheal Hart BY

Michael Hart
Town Administrator
Town of Berthoud, Colorado

PUBLIC INPUT ITEM 175

PITKIN COUNTY
HEALTHY RIVERS
protect. defend. enhance.

September 17, 2015

Via e-mail: cowaterplan@state.co.us
James Eklund, Director
Colorado Water Conservation Board
1313 Sherman St., Room 718
Denver, CO 80203

RE: Pitkin County Healthy Rivers and Streams Board Comments on the Second Draft of Colorado's Water Plan

Dear Mr. Eklund and CWCB Board:

The Pitkin County Healthy Rivers and Streams Board commends the Colorado Water Conservation Board and the dedication of its staff and statewide participants in the production of the second draft of Colorado's water plan. The Healthy Rivers and Streams Board particularly thanks the CWCB for its invitation and consideration of public comments on the water plan.

The Pitkin County Healthy Rivers and Streams Board is the only public body in the State of Colorado constituted exclusively to promote and facilitate the protection of rivers and streams. Our board functions through a dedicated tax adopted by the Pitkin County voters with the particular mission of:

(1) Maintaining and improving water quality and quantity within the Roaring Fork watershed;

(2) Purchasing, adjudicating changes of, leasing, using, banking, selling, and protecting water rights for the benefit of the Roaring Fork watershed;

(3) Working to secure, create and augment minimum stream flows in conjunction with non-profits, grant agencies, and appropriate State and Federal agencies to ensure ecological health, recreational opportunities, and wildlife and riparian habitat; promoting water conservation; and

(4) Improving and constructing capital facilities that contribute to the objectives listed above.

PITKIN COUNTY
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It is undeniable that Colorado is facing a significant water shortage in the future. The shortage is exacerbated by our anticipated growth in population and the potential diminishment of water supply as a function of drought cycles and long-term climate change. This dilemma is particularly vexing in that satisfying our consumptive needs must be planned within the framework of an uncertain future of reduced natural availability of water resources. Truly, no Coloradan believes our water supply should be satisfied by sacrificing our quality of life or the very natural environment that has brought so many of us here and supports at numerous levels our state's vibrant and growing economy.

Pitkin County Healthy Rivers and Streams Board believes the path forward is through an aggressive program of conservation including re-use and infrastructure improvement. This work will produce more available consumptive water, faster and cheaper, with less negative effects to the natural environment than any potential trans-mountain diversion project or reliance on unpermitted or unproven IPPs. The principal concern of Pitkin County Healthy Rivers and Streams Board is the Roaring Fork drainage. The Roaring Fork drainage water resource is integral to the future of our community. It is unacceptable for the growing population of the Front Range to look to the Colorado basin or our drainage as a resource to be exploited rather than a resource to be preserved.

Pitkin County Healthy Rivers and Streams Board endorses the positions taken by the Pitkin County Board of County Commissioners and in particular those positions regarding Chapter 8 of the Water Plan.

Pitkin County Healthy Rivers and Streams Board wholeheartedly endorses the IBCC's 7 Point Agreement as expressed in Chapter 8 of the second draft. However, Pitkin County Healthy River and Streams Board strongly believes that the seven points, or principles, need to be elaborated further in order to eliminate any ambiguity or equivocation and expanded in scope to apply equally to the various IPP's that involve trans-basin diversions. The IPP's are the result of simple community canvassing to obtain information as to any potential plans or processes that are being contemplated around the state. The IPP's have not been vetted and vary widely in size, impact and feasibility. Further, Pitkin County Healthy Rivers and Streams Board believes that these seven principles must be given the force of law through legislative enactment and must be recommended as such to the Legislature by the CWCB. Without enhancement and independent legislative enactment, the seven principles will be subject to erosion as we have already seen in the recent discussions concerning conservation goals.

Principle three, concerning triggers upon which to base the operation of a new diversion project, must also be elaborated upon particularly. These triggers must

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Include a requirement that the operation of any new TMD shall not exacerbate to any degree the risk of compact curtailment. These triggers must include an analysis of all Colorado River system reservoirs such that sufficient stored water is demonstrated to exist within the state to meet West Slope demands, both consumptive and non-consumptive, endangered species recovery programs and compact compliance.

Future West Slope needs as contemplated in principle five must be quantified. This quantification might be based upon a presumed and stated growth rate for the West Slope but must guarantee that water be available for West Slope consumptive and non-consumptive needs. Only with acceptance of a defined growth rate for the West Slope will its various economies be protected. Mitigation should not be left to a system of economic compensation but to an allocation of the water resource which will be crucial to the West Slope's long-term future.

Colorado law has long recognized the importance of the empowerment of local jurisdictions to review the impacts of water development projects and to require appropriate mitigation of negative impacts. The Water Plan must particularly recognize the importance and necessity of local jurisdiction review of water development projects through 1041 authority and other applicable local land use and development regulatory authority.

At this point in time, the effects of climate change are uncertain. However, there is widespread agreement that climate change will bring Colorado a degree of increased drought periods and lessening snowpack. The Water Plan must make clear that the development of any new water projects that transport water away from the West Slope must bear the full risk of whatever effect is occasioned upon us through climate change.

Thank you for your consideration of these comments and we look forward to cooperative solutions to managing our state's water resources.

Sincerely,

Andre Wille
Chairman

530 East Main Street, Suite 302 Aspen, Colorado 81611 970.920.5190 pitkincounty.com/healthyrivers

RESOLUTION OF THE HEALTHY RIVERS AND STREAMS CITIZENS ADVISORY BOARD
OF PITKIN COUNTY, COLORADO
SUPPORTING THE DRAFT COLORADO'S WATER PLAN CONCEPTUAL FRAMEWORK

RESOLUTION NO. 1- 2015

1. WHEREAS, the collective Colorado River Basin is the "heart" of Colorado. The basin holds the headwaters of the Colorado River that form the mainstem of the river, some of the state's most significant agriculture, the largest West Slope city and a large, expanding energy industry; and

2. WHEREAS, the Colorado Basin is home to the most-visited national forest and much of Colorado's recreation-based economy, including significant river-based recreation; and

3. WHEREAS, the collective Colorado Basin is the state's major "donor" basin of water, providing between 450,000 to 600,000 acre-feet to farms and cities of eastern Colorado. Climate change, West Slope Gaps, undefined environmental and recreational needs and existing IPP's will likely take approximately 140,000 acre feet of additional water, to be developed on the West Slope and Colorado Basin; and

4. WHEREAS, it has been rightfully stated that the past is no longer a guide to the future, and the old paradigms in water supply no longer work. The notion that increasing demands on the Front Range can always be met with a new supply from the Colorado River, or any other river, are no longer valid. We must develop a plan that is truly proactive, not reactive. We cannot afford to wait until crisis becomes the guide behind our decisions; and

5. WHEREAS, compliance with the Colorado River Compacts is a **statewide** responsibility because Colorado River users reside on both sides of the Continental Divide. Existing users should not bear the risk of a compact curtailment caused by overdevelopment of the remaining increment of the Colorado River. Compact administration in the Colorado River Basin must be avoided. Impacts from a compact curtailment, or strategies to avoid a compact curtailment, must be borne equitably by all Colorado River users; and

6. WHEREAS, the Colorado River Basin Water Demand and Supply Study, a collaboration of the Bureau of Reclamation (BOR) and the seven basin states, concluded that there would likely be an average shortfall of more than 3 million acre-feet in the entire seven-state region by 2060. The Colorado River has already reached a point where water supply is outstripped by water use.

7. WHEREAS, the four western slope roundtables envision a collective Colorado River basin that is home to thriving communities benefiting from vibrant,

healthy rivers and outstanding water quality that provides for all of the collective Colorado and western slope needs.

8. WHEREAS, in consideration of the Colorado Water Plan that has been mandated by Governor Hickenlooper, the Colorado River Basin Roundtable adopted the following West Slope Principles:

a. Solutions in the Colorado Water Plan (CWP) to supply water for growth and development in one part of the state should not over-ride land use plans and regulations adopted by local governments in the part of the state from which water will be taken.

b. The CWP should protect and not threaten the economic, environmental, and social well-being of the West Slope.

c. The CWP should identify a process and requirements for each basin to exhaust available water supply within its own basin before planning diversions from another area of the state.

d. The CWP should outline mechanisms to mitigate the risk of potential Compact curtailment of the Colorado River. For example, the CWP should adopt low-risk legal and hydrologic assumptions related to Colorado's obligations under the Colorado River Compact and the Upper Colorado River Basin Compact in order to minimize the risk of curtailment on existing uses of Colorado River basin water.

e. The State should not assume a role as a proponent of a water project until the State regulatory process has been completed and the project has been agreed to by the impacted counties, conservancy districts and conservation districts in the area from which water would be diverted.

9. WHEREAS, given the situation outlined by SWSI, the CWCB Climate Change Report and the Colorado River Basin Water Supply and Demand Study, it would be unrealistic to look for significant new supplies of water for the East Slope from the Colorado River as a primary source. Any further depletion of water from the Colorado River increases the risk of a compact curtailment; and

10. WHEREAS, the Colorado Water Plan's Conceptual Framework and its Seven Principles allows for input by local decision makers and the participation by all affected parties; and

11. WHEREAS, the Colorado Water Plan's Conceptual Framework and its Seven Principles is a proactive approach to difficult water supply issues and will allow for collaborative solutions for all affected parties; and

NOW, THEREFORE, BE IT RESOLVED that the Pitkin County Healthy Rivers and Streams Board supports the draft Colorado Water Plan's Conceptual Framework for

the future consideration of any more transmountain diversions or major changes in the operation of existing projects.

BE IT FURTHER RESOLVED that the Colorado Water Plan's Conceptual Framework should be considered for application to Identified Projects and Proposals (IPP).

BE IT FURTHER RESOLVED that the Colorado Water Plan's Conceptual Framework provides an effective process for the participation and agreement by all of the affected and/or impacted county(s).

INTRODUCED, READ, AND ADOPTED ON THE 17TH DAY OF SEPTEMBER 2015.

PITKIN COUNTY HEALTHY RIVERS AND STREAMS BOARD

By: Andre Wille, Chairman

Date: September 17, 2015

PUBLIC INPUT ITEM 176

Colorado Springs Utilities
It's how we're all connected

September 17, 2015

Colorado Water Conservation Board
1313 Sherman Street, Room 721
Denver, CO 80203

RE: Colorado Water Plan Comments

This letter transmits Colorado Springs Utilities' (Utilities) comments on the 2015 Second Draft of the Colorado Water Plan (Plan). Utilities has been actively engaged throughout the Colorado Water Plan process, both in reviewing draft chapters of the Plan and participating in the discussions that have occurred through the Basin Roundtables, the Interbasin Compact Committee (IBCC) and various other public forums. This letter builds on the comments we provided previously on the First Draft Colorado Water Plan, both individually as Utilities, and collectively as a member of other water-related organizations. Please consider the comments submitted previously as included by reference, as they are still applicable to the Second Draft of the Plan, and we strongly believe that these comments need to be reconsidered and included in the Final Plan.

First and foremost, Utilities commends the Colorado Water Conservation Board (CWCB) and its staff for their hard work and dedication in developing the Plan since Governor Hickenlooper signed Executive Order D2013-005 in 2013. CWCB has done an admirable job managing the development of the Plan under extremely aggressive deadlines, considering feedback from stakeholders with varied and disparate interests through an extensive public process. As an organization that is currently establishing its own long-term vision for meeting the water needs of current and future generations of customers through its new Integrated Water Resource Plan, Utilities understands and appreciates the challenges associated with developing an all-encompassing Plan that establishes a roadmap for addressing the water supply "gap" for the State as a whole, while remaining consistent with Colorado's values.

The Plan is intended to offer a "strategic vision" that ensures "*a productive economy that supports vibrant and sustainable cities, productive agriculture, a strong environment, and a robust recreation industry*[1]." Unfortunately, the Plan falls short in establishing a common vision for Colorado's water supply future. For all of its lofty goals, the Plan cannot truly be considered "Colorado's Water Plan" until numerous technical and structural deficiencies and underlying biases are corrected. Through this letter, Utilities seeks to provide constructive, targeted feedback on a select number of overarching themes and critical issues that must be addressed to secure our endorsement of the Plan. Included below for your consideration are Utilities' comments, organized into key topics and themes.

[1] Source: http://coloradowaterplan.com

121 South Tejon Street, Third Floor
P.O. Box 1103, Mail Code 930
Colorado Springs, CO 80947-0930

Phone 719.448.8888
www@csu.org

General Observations on the Plan

Theme No. 1 – Overall Impressions of the Plan

At a time when bold, inspired leadership is needed to address Colorado's many complex water challenges, the Second Draft of the Plan falls short in providing clear direction for how to responsibly develop scarce water resources. The citizens of Colorado expect a clear plan to meet the water needs of the state, but we seem to be getting more of a laundry list of options that Colorado is not going to pursue. For example, we are not going to let population growth change anything, we are not going to use as much water, we are not going to "buy and dry" agriculture, we are not going to impact recreation or the environment, we are not going to build a TMD, etc. These items are all important considerations for how to implement a plan, but the document seems to present these items as being the plan itself. Utilities calls the CWCB back to the concept of the "four legs of the stool" i.e., Conservation/Reuse, Identified Projects and Processes (IPPs), Agricultural Transfers and Alternative Transfer Methods (ATMs), and one or more new transmountain diversions (TMDs), with additional storage as an integral part of each of these solutions. These concepts must all work together simultaneously as The Plan, Colorado's Water Plan, for meeting Colorado's water needs. Without a firm and clear Policy Statement that implementing these four concepts are in fact Colorado's Plan, the rest of the document is a directionless recitation of guardrails without a road.

Utilities is concerned that the Plan is viewed by some as a vehicle for managing growth and creating social change by exerting influence and control over how water is developed and managed, rather than a document that provides strategic direction for how to implement projects and processes to meet the current and future needs of Colorado's citizens. The Plan also seems to suffer an "identity crisis" because, in many ways, this document only provides a concept for developing and implementing a plan, and not a strategic framework with definitive policy statements and actionable items that define how the State will address the state's water supply "gap."

Adaptive Management is a method of implementing the Plan (i.e., the four legs of the stool as described above), however it is not the plan itself. Most of the activities and projects that will be needed to fully implement this Plan will take years if not decades to accomplish. As currently proposed, the adaptive management approach seems to be advocating a "wait and see" approach, only implementing various concepts if certain signposts are reached. Utilities strongly recommends that the State adopt a modified adaptive management approach that promotes initiation of all concepts immediately, and using the signposts as decision points to slow or stop implementation of certain concepts. This is the only way to assure that projects are online when needed.

In addition to these overarching concerns, the current version of the Plan is rife with run-on sentences, inconsistencies and redundancies, and obvious editing by committee that diminishes the key messages of the Plan. It is also extremely important for the Plan to use consistent terminology and definitions throughout the document and to provide clarity and consistency to the "jargon" that has been used in statewide water planning over the past decade. Utilities is hopeful that these deficiencies will be corrected so the Final Plan meets the high expectations of both the Colorado water community and the general public.

Theme No. 2 – Measuring Change Against Appropriate Baselines

One of the most significant flaws in the Plan, and the statewide water planning that has occurred over the past decade, has been the failure to establish proper baselines for measuring change from one condition to another. Utilities has made this comment on numerous occasions, including in previous comment letters on this Plan and the Statewide Water Supply Initiative (SWSI), but has not seen evidence that the CWCB is willing to address this issue in a meaningful way. An essential first step for any discussion involving water involves establishing appropriate baselines, and using adequate, reliable data to support decision-making. This is particularly important for evaluating change as it relates to conservation, agricultural transfers, and environmental and recreational attributes.

The Plan fails to examine, for instance, what are the appropriate baselines for measuring change to environmental and recreational attributes. Too often, it is assumed that environmental or recreational conditions that existed before water development were somehow preferable to those conditions that exist today, and that any additional increment of water development would have adverse impacts. In many cases, water development has resulted in more reliable flows, improved habitat, better water quality, and improved recreation for key stream reaches versus pre-development conditions. In other cases, what people are seeking to protect is simply what they are accustomed to, which is often an environment that has already been altered by natural or man-made processes, but is nevertheless resilient and adaptable to the water that is available. Adoption of a "no change" stance as it relates to the environment denies the reality of environmental change and runs counter to the concept of environmental resiliency.

Similarly, it may not be appropriate for the Plan to measure current or future changes in agricultural water use against ratios and baselines that were established in the late 1800s. The Plan seems to imply that it is acceptable, or even preferable, to maintain the "status quo" of agricultural water use levels that have existed for over 120 years (which currently constitutes approximately 89% of the State's total water use), and that a reduction in total statewide agricultural water use by even a few percentage points would result in an undesirable future. A more realistic approach would be to develop a comprehensive strategy that ensures adequate water supply and protections for Colorado's prime farmland, recognizing that not every farm acre in every basin provides for the highest and best use of the State's scarce water resources.

For conservation planning, the amount of savings that can reasonably be achieved in the future is highly dependent on the baseline conditions and underlying data from which savings are measured. Utilities believes that the approach taken in the Plan for establishing conservation goals significantly overestimates the savings that can be reasonably achieved because of the baseline chosen and the methodology employed for estimating savings potential. We do not understand, for instance, how the CWCB can use data collected from existing conservation plans on file, which in many cases is consistent with the "Low Conservation Strategy", and assume that meeting a "stretch goal" that falls somewhere between the Medium and High Strategies is reasonably attainable or "in the best interest of the state." It is also unclear how the IBCC arrived at a goal of 400,000 acre feet, as there is no information provided regarding the process or logic supporting its adoption.

Theme No. 3 – Bias Against Growth and M&I Water Uses

Beginning with the opening paragraphs of Section 1 (Introduction), the Plan perpetuates a fear of change and portrays future growth as a threat to *"what we know and love about our state*[2]*."* The Plan seems to imply that the environment, recreation, and agriculture that exists today must somehow be protected or "saved" from additional increments of municipal and industrial (M&I) water development to ensure that we are able to maintain our quality of life. Section 1 establishes a fundamentally flawed "problem statement" that is both anti-growth and anti-City. This sentiment carries through the remainder of the document, creating an inherent bias in how both challenges and solutions are presented. If the Plan is to reflect the values of the citizens of Colorado, it must recognize and validate the values clearly espoused by the silent millions in the State who have voluntarily chosen the municipal lifestyle of single family residences with a reasonable amount of bluegrass lawn.

The Plan significantly undervalues the social and economic benefits that are associated with the M&I water uses that occur in these urban centers and are responsible for generating over 80% of the State's economic activity and majority of the State's tax base, which in turn provides funding for roads, schools, and other infrastructure and services throughout Colorado. Although Utilities acknowledges that there are significant challenges associated with an increasing population, the growth that will occur in coming decades will also increase trade flows between regions, resulting in a larger and more reliable customer base for agriculture, increased tourism dollars for West Slope communities, and an increased demand for water-based recreation.

The Second Draft of the Plan remains inordinately focused on solving the real or perceived issues associated with municipal and industrial (M&I) water use which currently accounts for around 7% of total statewide water use, and is expected to only account for around 15% of statewide water use by 2050[3]. Although the Plan acknowledges the "*vital importance of urban landscape and its benefits*[4]" and that "*healthy urban landscapes enhance the livability of a city or town and are a crucial asset for urban populations*[5]", there remains too much focus on curbing outdoor water use, which currently accounts for less than 4% of Colorado's total water use, but adds substantial economic and societal value to urban areas. It is important to note that many city dwellers value their city parks, ball fields, and backyards just as much as the scenic rivers or bucolic valleys, and they enjoy their urban environment far more often. These citizens do not want to see their outdoor urban areas transformed into landscapes that resemble Albuquerque, as would likely occur if the Medium to High Conservation Strategies are implemented.

Utilities believes it would be more productive for the Plan and future statewide water discussions to focus on exploring those factors that provide for a "reasonable residential experience," rather than maintaining such a myopic focus on measuring acre-feet of water saved, or blindly assuming that it is undesirable for future urban outdoor water use to constitute a greater fraction of the State's total water use. How can we expect current and future generations of citizens in urban areas to understand or appreciate the value of locally grown food in the Lower Arkansas Valley or the importance of healthy rivers on the West Slope if they do not have healthy, sustainable outdoor spaces of their own to first

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2 Source: Paragraph 1, Section 1: Introduction of the Plan.

3 Statewide Water Supply Initiative (SWSI, 2010)

4 Source: Page 82

5 Source: Page 86

make a connection with nature? Further disconnecting people from the land may have small short term gains in terms of water use, but may have larger unintended societal consequences.

Theme No. 4 – Disruption to Responsible and Productive Planning

Utilities greatly respects and admires the Governor Hickenlooper's desire to establish a comprehensive, strategic vision for addressing Colorado's current and future water challenges. We also understand and appreciate the Governor's efforts to motivate and inspire the State to develop a comprehensive Plan that is consistent with Colorado's water values with a sense of critical importance and urgency that has been lacking in previous planning efforts. While we appreciate the Governor's intentions and believe progress has been made since Executive Order D 2013-005 was issued, we also believe that developing the Plan has, in many ways, been disruptive and counterproductive to the progress that has been made over the past decade in identifying and addressing water challenges, quantifying the current and future water supply gap, and having difficult discussions about how to appropriately develop and manage the State's scarce water resources.

Sometimes slow, but steady progress had been made over the past decade to identify and address Colorado's many water challenges through efforts like SWSI and the IBCC and Basin Roundtable processes authorized under HB05-1177. Utilities believes that the State was well positioned to take a significant leap forward in its understanding of complex issues and its development of a plan for implementing projects and processes designed to address the water supply "gap" through the forthcoming SWSI 2016 efforts. Through close collaboration with subject matter experts through the Water Conservation Technical Advisory Group and other stakeholder processes, the CWCB was able to design and implement studies that were increasingly effective at providing the information necessary to effectively evaluate Colorado's water needs and support decision making, particularly as the CWCB is able to gather higher quality of data over a longer time period to support the analyses.

Because of the nature and magnitude of the water related challenges facing the State now, and in the future, there is a strong desire to create a sense of urgency in developing solutions to address these challenges. While it is important to address Colorado's water challenges in a timely and responsible manner, those who do not live and work in Colorado's water community often do not see or appreciate the full extent to which planning and action is occurring every day on a grassroots level within all water use sectors. Colorado's water community operates on its own schedule, affectionately referred to as "Water Time" which is very different, and often slower than other industries, but no less effective. The extremely aggressive deadlines (driven by "Political Time") that were imposed for completing the Plan did not necessarily mesh with "water time" and Utilities is concerned that many of the analyses, conclusions, and recommendations contained in the Plan were rushed and not of the same quality as the work that is allowed to occur through slower, but more thoughtful deliberations. In the future, there should be greater acknowledgement that the majority of the State's water users are responsibly planning to address their water needs according to timelines that meet their objectives, and at a statewide level, there is perhaps a "middle ground" between progress measured on "water time" and the aggressive deadlines imposed on creating the Plan.

Utilities is concerned that the aggressive deadline to complete the Plan was, in many ways, disruptive to the "bottom up" planning, trust and relationship building, and the healthy conversations that were occurring between individuals, water use sectors, and basins. As an active participant on the

Arkansas, Colorado, South Platte, and Metro Roundtables, as well as the IBCC, Utilities observed that much of the goodwill and healthy dialogue that had been fostered over the past decade through the HB-1177 process was significantly diminished once the Executive Order was signed, as various individuals and interest groups immediately "ran back to their corners." They became focused on protecting their interests and resorted to their more traditional, parochial views of water. Utilities is hopeful that this is a temporary phenomenon and that we are able to reinvigorate the productive discussions and rebuild the relationships that have been established over the past ten years.

It is Utilities' understanding that that the CWCB will embark on the SWSI 2016 statewide planning process shortly after finalizing the Plan. While we fully support the next iteration of the SWSI process as reflected in our comments above, we are concerned about the collective motivation, will, and stamina of the CWCB Board and Staff, the Basin Roundtables and IBCC, and other stakeholders to undertake yet another significant planning effort so closely following such a monumental effort as the Colorado Water Plan. Utilities recommends that the CWCB have a thoughtful discussion about whether it is reasonable or appropriate to begin the SWSI 2016 efforts in earnest next year, or if it would be more beneficial to delay this effort until a later date to allow for additional data gathering and discussion prior to implementing the next phase of statewide water planning.

Theme No. 5 – Flexibility in Regulation and Administration

An underlying theme in the entire plan is a resistance to change and flexibility. Utilities wholeheartedly agrees that existing water law and regulatory structures need to remain in place in order to provide the invaluable protections of private interests and property and the environment. Even so, we also recognize that the overzealous misapplication of these protections is a significant hindrance to cooperative and innovative solutions. This is especially true as we move out of the era of water appropriation and into the era of reallocation.

Colorado Water Law has been an excellent framework of water allocation that has withstood the test of time, providing both certainty and flexibility with appropriate protections. However, recent trends have been to a more rigid application and interpretation of water law both in water court cases and in administration of water rights. Water law and administration is sometimes applies as an exercise in the interpretation of fine points of legal theory and blind adherence to positions as opposed to the common sense application of principles to real life practice. Colorado Springs calls the state back to a common sense application of water law and a return to injury as the standard.

Hand in hand with common sense administration is a need for all Colorado Water practitioners to become more comfortable with flexibility. It will be absolutely imperative as we move into a more water short future to have the ability to implement creative and innovative solutions in real time to move water, trade water and share resources and infrastructure. This requires a willingness and acceptance of flexibility not just for those proposing the operations but for all others that may (or may not) be impacted by the operation. The days of legal grandstanding and opposition must end in order to move into the future we envision. To this end Utilities proposes the following possible reforms:

- Redefine and loosen restrictions around the "speculation" doctrine. In a world of reallocation, flexibility, and the need for quick decisions and action, Colorado's water community needs to become more comfortable with a more flexible approach.

- Make a clear distinction between impacts associated with the change and quantification of a water right and the impact of moving an already changed water right. In the case of exchanges, the only impact of moving water legally and physically available at an exchange from point to an exchange to point is the flows in the river. The original decree and water type of the water is immaterial to the impact to flow in the stream. Any impacts related to the origin and change of the right should be handled in a separate decree.
- Flex use water as proposed in recent legislation that provides multiple uses of a water right at multiple locations will be an absolute necessity for innovative and cooperative solutions in our future.

The same can be said of regulatory provisions and protections. Without diminishing the importance of protections or the institutions, interests, conditions, or environments they protect, we must recognize that change is a part of the natural work, as are humans, and change does not equal degradation. Too often, processes are used in a way to prevent progress and change in the name of protection, rather that honestly assess the change to determine its impact and appropriate mitigation. Also, mitigation is often misapplied and used to either hinder projects or to accomplish other goals than those stated. A common sense, back to the original intent approach to regulations along with a flexible and cooperative approach to their application and implementation will be absolutely necessary in the future if we are to be successful in meeting the many challenges of the future.

Specific Comments on the Plan

Section 2 Our Legal and Institutional Setting

The definition of Water Conservancy Districts contained in the discussion of Special Districts on Page 24 of the Plan is much too narrow. This definition fails to recognize that many conservancy districts, such as the Southeastern Colorado Water Conservancy District and the Northern Colorado Water Conservancy District, were formed for the primary purposes of building and administering water projects, interfacing with federal agencies, and administering the repayment of project capital and operation & maintenance costs. For most conservancy districts, efforts to "*transmit information and coordinate efforts among agencies, agencies, political subdivisions, and private citizens and businesses concerning the conservation, protection, and development of Colorado's water resources*[6]" is an important, but secondary consideration, subordinate to the core mission of delivering water to people.

Section 6 Water Supply Management for the Future

Stretch Goals

CWCB should give serious consideration as to whether or not it is appropriate to include a conservation "stretch goal" in the final version of the Plan. First and foremost, we are concerned that an aspirational, voluntary "stretch goal" could become a mandatory requirement for project approval through a local, state, or federal permitting process. Also, there remains significant uncertainty as to whether the stretch goal is reasonably achievable, based on the underlying data and baselines selected for measuring savings.

6 Section 1, Page 24. Seventh Bullet.

Utilities fully supports the concept of including a storage "stretch goal" in the Final Plan, as proposed by the South Platte and Metro Roundtables. The Plan and any associated storage stretch goal should encourage and incentivize storage constructed for mitigating current and future water supply risks, storing conserved water, optimizing system operations, facilitating water sharing agreements, and supporting environmental and recreational attributes. The CWCB should consider separate stretch goals for 1) rehabilitating and/or enlarging existing storage and 2) creating new on-channel or off-channel storage.

Identified Projects and Processes and New Supply Development

The Plan consistently overlooks the fact that one or more new transmountain diversions (TMDs) will ultimately need to be constructed to address Colorado's water supply gap, even with full development of the Identified Projects and Processes (IPPs) and implementation of significant levels of conservation, reuse, and temporary and permanent agricultural transfers. The Final Plan should contain a definitive statement that a new TMD will be constructed, even if no formal concept has been proposed. Should the Plan fail to contain such a definitive statement, then the Conceptual Framework should be removed from the Plan, as there is no need to discuss the terms and conditions under which a new TMD would be approved, if there is no clear acknowledgement that a TMD is necessary to meet future water needs. To this end, any Plan that fails to include a section on New Supply Development is missing a critical water supply development option (i.e., "leg of the stool"), and cannot be considered a comprehensive, strategic vision for meeting Colorado's future water needs.

Utilities believes it is critical that consistent definitions be applied for what constitutes M&I IPPs to provide certainty and clarity around the statewide water planning process. Utilities is concerned, for instance, that during negotiation of the Conceptual Framework, there was apparently discussion around the definition of an IPP and whether some of the conditions that would have previously applied only to a new TMD or new supply project should also apply to existing IPPs with a transmountain diversion component. Changing definitions and terminology, particularly as it relates to IPPs could have significant impacts as to how these projects are viewed in the context of statewide water planning and ultimately how projects get approved and implemented, and should therefore be rejected. Utilities supports the definition of an IPP originally developed in SWSI 2010, which was subsequently clarified in the SWSI 2016 Glossary, as reported to the CWCB at their March 2014 board meeting. To that end, Utilities reaffirms that the Eagle River Memorandum of Understanding (MOU) Project and Continental-Hoosier System Storage Enlargement Project are contained in the Arkansas and Colorado Basin Implementation Plans and meet the requirements to be considered an IPP.

The Conceptual Framework

Utilities recognizes and appreciates the incredible amount of effort that went into the development and negotiation of the Conceptual Framework. This is a very valuable milestone in the discussions of how a new TMD may be implemented. However, as is the case with much of the Plan, Utilities is afraid that the timeline required to reach agreement on "something" to include in the Plan was too short and ended critical discussions prematurely. As a result, we believe that a number of the concepts have not been afforded the attention they deserve, and there is much more discussion and negotiation needed to eliminate misunderstandings and misconceptions. We recognize that the Conceptual Framework is only a starting place for discussions, and is not intended to represent binding policy, but once published, the concepts have a tendency to calcify and become resistant to any effort to change or revisit.

It is also a significant concern of Utilities that the publication of these concepts may be viewed by regulatory agencies as statements of State Policy to be construed as requirements in permitting processes. Utilities calls to witness the Upper Arkansas Voluntary Flow Management Program as an example. This purely voluntary, cooperative program was viewed by the U.S. Bureau of Reclamation as a policy that provided certain protections, and therefore the USBR believed that in its decision making authority, it did not have the ability to leave the program voluntary because it may not provide the maximum amount of protection. As a result, the Voluntary Flow Program was made a mandatory requirement as a condition of getting a contract with Reclamation. A very real analog could be a conservation stretch *goal* becoming a conservation stretch *requirement*. Utilities understands that the CWP is not responsible for the regulatory actions of other agencies, but to reduce the risk of this happening, Utilities strongly requests that language be added to the section to make it abundantly clear that the Conceptual Framework *is not* a statement of State Policy, and is not in any way to be interpreted or construed as a basis for any conditions or requirements in any water court case, state or federal permitting process, or contract negotiation.

Utilities understands that the version of the Conceptual Framework included in the Second Draft of the Plan is no longer the language that is expected to appear in the Final Plan, but has been modified by the IBCC as of August 25, 2015. Utilities agrees that changes to Principal 6 clarify much of the confusion and ambiguity present in previous versions of this section. However, Utilities does not agree that this solves the fundamental problem with this section, which is its application to anything but a New TMD. Early versions set a number of confusing and ambiguous conservation conditions on any water provider promoting a TMD project. Attempts to clarify these conditions resulted in more confusion and ambiguity, but also resulted in an expansion to have these conditions apply to any M&I project, not just a new TMD, which was unacceptable to most. Further modifications finally did bring some clarification to the conservation conditions, but even further expanded in applicability to all "covered" M&I water providers regardless of whether they have a water project or not. This may be a notion to consider, but it does not make sense in the context of the Conceptual Framework, and its inclusion is not acceptable to Utilities. Therefore, Utilities requests that if the Conceptual Framework is to remain in the Final Plan, then at a minimum, the entire second paragraph of this section that begins "*All M&I water providers that are covered entities….*" be stricken.

Finally, consistent with other comments and themes in this letter, Utilities believes that the Conceptual Framework represents a set of limitations and guidelines for how to implement a project that is not actually set forth in the Plan. If there is no clear call and decisive statement in the Plan to build a new TMD, then the entire Conceptual Framework is unnecessary and premature. For this reason, as well as those stated above, Utilities strongly advocates that the Conceptual Framework not be included in the Final Plan. If CWCB is unwilling to be responsive to this request then Utilities will not support inclusion of the Conceptual Framework in the Final Plan unless the following conditions are met:

- The Conceptual Framework and all its several parts must only apply to New TMDs.
- There must be recognition that conservation occurs over time, not as a precondition to TMD project approval. There must also be recognition that a stretch goal is exactly that - a goal - not a requirement.
- The Plan must maintain existing definition of IPPs, as defined in SWSI 2010 and clarified in the SWSI 2016 Glossary, and must commit that there are no additional requirements for existing

IPPs. Additionally, Colorado Springs requests that the projects it requested in SWSI 2010, as well as numerous times afterward in various processes and documents, which are the Eagle River MOU Project and Utilities' Continental-Hoosier System Storage Enlargement Projects, are included and recognized as IPPs. It is Utilities' position that these IPPs are not subject to the Conceptual Framework.

Storage

Utilities is disappointed with the relative lack of discussion on storage in the Plan. While we appreciate the Plan's focus on enlarging existing storage, we believe more attention should be paid to developing storage of all types (e.g., on-channel storage, off-channel storage, gravel pit storage, etc.). Accordingly, the Plan should include an affirmative statement that it is State policy to develop additional storage. This cannot be stressed enough, and Colorado needs to do as much as it can to secure as much additional storage of all types within its borders as is possible.

Section 6.3.1 Municipal Water Conservation

The Plan should explicitly note the relationship between the implementation of conservation measures, municipal utility revenue streams, and the need for future rate increases. Many municipalities bear significant "fixed cost" burdens, including those associated with the permitting and construction of new supply projects, yet see declining revenue streams as customers become more efficient in their use of water. At the very least, the Plan should acknowledge that the State must assist in public outreach and education efforts designed to gain acceptance of the need for escalating rates to meet a variety of challenges. This public education and outreach becomes even more critical if the State plans to add other water related taxes or fees (e.g., a "container fee" or watershed health surcharge) on top of those rates and charges that are required by water providers to cover the cost of service.

Utilities recommends that the Plan shift its paradigm as it relates to how it views and characterizes water conservation. Most often it is presented as a water supply to meet the gap. However, this misleads the discussion. In reality, water use goes on in perpetuity, far past the horizon of the Plan. In this regard, conservation is not a supply but simple *a delay in the rate of demand growth*. In other words, if you wait long enough, all of the "supply" from conservation will be gone, resulting is a new "gap". This means that conservation at best behaves as a non-renewable supply, and should not be relied upon to meet future needs.

Section 6.4 Alternative Agricultural Transfer Methods

While it is appropriate that the Plan includes robust discussion of how to maintain viable and sustainable agriculture, the current draft of the Plan focuses too heavily on the perceived risks to agriculture associated with "buy and dry" of agricultural water rights for M&I uses. The Plan should recognize that agricultural production and dry-up are a complex phenomenon, with economic, social, and climate drivers that overshadow threats of M&I "buy-and-dry". Often water is sold off the land only after some other driver has caused the cessation of production. In this regard it is inappropriate to try to solve all of agriculture's complex problems and issues on the back of water supply. Limitations and roadblocks thrown up against water transfers are the wrong tool and will not result in the preservation of agriculture, but in fact may result in impoverished farmers becoming enslaved to their encumbered lands.

The Plan should recognize that agricultural and M&I water users are, at times, in a free market competition for scarce resources, while also acknowledging the economic, social, and hydraulic connections that exist between M&I and agricultural water users. Proposed solutions to water shortage that balance risks and benefits and foster cooperation between Colorado's agricultural and M&I water users should be championed in the Plan.

Recent market conditions have resulted in a greater proportion of the State's agricultural land and water being consolidated by corporations and more successful local farming operations. In the Arkansas Basin, many recent large scale agricultural water rights and land purchases have been made by corporations based outside of Colorado, or in some cases, outside the United States. The Plan should acknowledge that there are economic and societal pressures outside of those associated with growth and increasing M&I water demands that create challenges for the short and long-term sustainability of agriculture in certain areas of Colorado. The Plan should further acknowledge that the majority of permanent agricultural to urban transfers to date have occurred as a result of the natural conversion of agricultural lands to urban lands, transactions where a willing agricultural seller approaches a willing M&I water buyer, or transactions where a third party such as a water broker assembles agricultural ditch company shares or water rights from willing sellers, then offers shares for sale through a market based process that is not actively promoted or pursued by M&I water users.

Much time, effort, and resources have been devoted to developing alternative agricultural transfer methods (ATMs). Although there has been much discussion about the importance of ATMs for meeting the State's future water needs while also maintaining healthy and vibrant agriculture, there have been few examples to date of ATMs that have been successful. Allowing development and testing of ATMs to occur in a market based "open laboratory" of innovation, where a wide range of ideas and practices can be tested, will increase the level of buy-in from agricultural and M&I interests, and will improve the probability of long-term success for ATMs. Because a full range of concepts for developing and implementing successful ATMs have not been fully tested and explored, the CWCB should be cautious about endorsing a particular ATM concept or approach at this time. Such an endorsement, either real or perceived, has the potential to stifle innovation or limit options for developing and implementing options which may ultimately prove to be more flexible, resilient, and sustainable than the ATMs that have been pursued to date.

Water users have increasingly relied on state agencies (specifically CWCB and the Division of Water Resources) and interested 3rd parties to facilitate the development of ATMs. While these entities can provide technical and policy assistance in developing and implementing ATM's, they should never be an impediment to direct dialogue between farmers and municipal water providers. It is often the case that agricultural and municipal water users have much more in common then they or others may realize. Examples of this include: reliance on snowpack for water supply, need for additional storage, concerns about decreasing supply, and operation of similar infrastructure. Working through common challenges often highlights mutually beneficial solutions which may complement ATM programs being developed. Routing communications through intermediaries or "gate keepers" often leads to unnecessary bureaucracy or process, mixed or incomplete messages, or introduction of politics and agendas which make negotiations much more difficult and diminish the value of market based solutions. Direct discussions between cities and farmers have the added benefit of building trust and understanding between different water use sectors which is not only critical for the success of ATMs, but often results

in secondary benefits such as water sharing arrangements that creates additional operational flexibility and optimizes water management for both agricultural and M&I water users.

During the 2013 legislative session, the Colorado legislature enacted two bills that evidence an intent to encourage municipalities to utilize ATM's to satisfy their municipal water needs. House Bill 13-1130, signed into law on June 5, 2013 allows the State Engineer to approve interruptible water supply agreements. House Bill 13-1248, signed into law on May 13, 2013, established a pilot project for municipal use of water leased from irrigators. The stated intent of the House Bill 13-1248 was to explore alternatives to permanent agricultural dry-up, and to allow municipalities to establish "leasing-fallowing" programs, whereby agricultural land is temporarily fallowed and the water is instead used as municipal supply. Both of these bills were passed after the Colorado Supreme Court decision in *Centennial Water & Sanitation Dist. v. City & County of Broomfield*, 256 P.3d 677 (Colo. 2011). It is clear that for these new and innovative approaches to be successful, it will be necessary for a municipality to have the legal right to transfer or exchange the water from a fallowing-leasing program to their water collection infrastructure. These bills are evidence of a legislative intent to permit municipalities to obtain decrees that would facilitate temporary use agreement waters. Without the ability to obtain a decree to permit the exchange of temporary use agreement waters to locations where the water can actually be used within the municipal water supply system, municipalities will have no assurance that future water supplies made available through these legislative programs can actually be transferred to locations where they can be stored and used and, as a result, will likely be forced to resort to more traditional permanent agricultural dry-up and change in use proceedings, which the legislature explicitly sought to avoid in House Bill 13-1248.

Utilities recommends that any reference to a "framework for an evaluation of agricultural transfers" be eliminated from the Plan. Accordingly, we are concerned about recent inferences made by CWCB staff that it may be appropriate to develop an "agricultural impact statement" process for evaluating potential impacts of agricultural transfers. We believe that this framework, as proposed, is inconsistent with the Plan goals for streamlining permitting processes and respecting private property rights, and would create yet another hurdle that will significantly increase the cost and time to implement projects, reduce opportunities for collaboration between Cities and agricultural interests, and create a venue for third parties to interfere with valid, market based transactions between willing buyers and sellers of water.

Section 6.6 Environmental and Recreational Projects and Methods

Utilities previously commented that it is critical that conservation and efficiency apply to all water uses to ensure the State's scarce water resources are applied to beneficial use in the most responsible and efficient manner possible. Conservation and efficiency goals have long been a key component of responsible water planning for M&I water uses and the Plan is recommending that additional and more stringent metrics be applied to achieve a larger degree of water savings from M&I uses in the future. To that end, Utilities believes the Plan must also emphasize the need for conservation and efficiency in other water use sectors and should include conservation and efficiency best management practices (BMPs) and metrics for environmental and recreational projects and attributes. It may be appropriate, for instance, to establish conservation and efficiency metrics for Recreational In-Channel Diversions that promote efficient design of structures and allow a "reasonable recreational experience" to be achieved using lesser volumes of flow.

Section 9.4 Framework on More Efficient Water Project Permitting Process

Utilities believes that the latest draft of the Plan contains some helpful, concrete suggestions upon how to improve the permitting process, including through the use of a LEAN review designed to facilitate the identification of efficiency measures, and a call for earlier and coordinated involvement by state agencies in the federal permitting arena. That said, Utilities is of the opinion that the Plan could be further improved by:

- Establishing clear criteria governing the appropriate role of local governments in the permitting of matters of statewide concern; and
- Obtaining immediate state support, including through the Governor's Office, of the approval and timely completion of IPPs and new supply projects, including storage facilities, subject to compliance with legitimate local, state and federal permitting requirements.

As noted by the Front Range Water Council (FRWC) in its comments on the Draft Plan, state agencies currently adopt positions on legal, legislative and policy issues that reflect the exercise of discretion by the agency, i.e., are not mandated by law. However, those positions oftentimes stifle creative and flexible options for filling the water supply gap. This occurs in the context of water court decree interpretations, the implementation of ATMs, the efficient use of water supplies under a "One Water" approach where stormwater and wastewater become an integral part of the overall water supply, etc. State agencies should be required, at the very least, to analyze the consequences of their decisions in light of the state Plan and the impact of those decisions on the state's ability to fill the water supply gap.

Relative to the issue of local control, particularly as exercised under the H.B. 1041 permitting process, no one is advocating a repeal of this statutory scheme. The mitigation of the on-the-ground environmental consequences associated with project location selection and construction, and the need, within local jurisdictions, for coordinated water supply decision-making are important considerations. That said, there are only a very limited number of 1041 statutory criteria applicable to water projects, yet the scope of local control thereunder appears unbridled. Further, there is no longer any state oversight over the adoption of local regulations, as the prior statutorily mandated review thereof by the Board of Land Commissioners has elapsed. Nevertheless, the State continues to recognize these water supply projects as "matters of statewide concern." Simply stated, local governments can now dictate the location and ultimate cost of water projects, including projects that deliver supplies outside their jurisdiction and have associated extra-territorial impacts, without any effective checks or balances. Parochial interests can control. It is imperative that this situation be addressed through a stakeholder process, with the end objective being a set of clear, concise and fair criteria that meet local needs while allowing water projects of truly statewide concern to proceed forward.

Finally, while it would be advantageous, at times, to have the state as a "supporter" of a water project, the fact of the matter is that given the state's regulatory responsibilities, it can only assume such a role fairly late in the process. Thus, Utilities supports the concept advocated by the FRWC whereby the state is a true "advocate", from the outset, for the completion of identified IPPs and new water supply projects, recognizing that they will nevertheless need to meet legitimate permitting requirements as they advance towards construction. In other words, for example, the State can immediately indicate support for the utilization of our remaining compact entitlements through the construction of a variety of projects, including new transbasin diversions, and support for the

completion of water reuse/recycling projects, though the exact location and nature thereof is not yet known. This removes from the debate any doubt as to the State's general position on projects of this nature, while affording project proponents a needed measure of certainty in future planning efforts.

Conclusion

Utilities greatly appreciates the hard work and dedication of the CWCB and its staff meet aggressive deadlines for developing the Plan while addressing extensive public input and a wide range of technical and policy challenges. Utilities will continue to closely monitor the Colorado Water Plan process and stands ready to offer its input and expertise to CWCB and its partner agencies as they work to finalize the Plan by the end of 2015.

Regards,

M. Patrick Wells, P.E.
Managing Engineer
Water Resource Planning

cc: Wayne Vanderschuere
Brett Gracely
James Eklund, CWCB
Rebecca Mitchell, CWCB

PUBLIC INPUT ITEM 177

WATEREUSE COLORADO

Advocating legislation and regulations which facilitate appropriate water reuse, promoting safe and effective reuse throughout Colorado, and improving public understanding of water reclamation.

September 10, 2015

James Eklund, Director
Colorado Water Conservation Board
1313 Sherman Street
Denver, CO 80203

Re: WateReuse Colorado Comments on the July 2015 Draft Colorado Water Plan

Dear Director Eklund:

WateReuse Colorado is the state section of the national WateReuse Association. WateReuse Colorado is comprised of a broad range of reuse professionals, including the state's preeminent voices in water reuse – municipal water providers, users of recycled water, engineering consultants, researchers, and others. Our primary objectives include supporting the mission of the WateReuse Association[1], advocating legislation and regulations that facilitate appropriate water reuse, promoting safe and effective reuse throughout the state, and improving public understanding of water reclamation. As such, we greatly appreciate this opportunity to provide input on the July 2015 draft of Colorado's Water Plan (Water Plan or Plan). We also had the opportunity to provide input on the earlier April and December 2014 versions and thank you for incorporating many of our comments into the current draft.

We commend you and your staff for the work you've done to develop a comprehensive and meaningful document to guide the state's water future. Increased reuse is clearly recognized as an important component of a suite of strategies necessary to meet Colorado's current and future water demands. The Plan includes helpful background on water reuse, treatment technologies, regulations, research, existing and planned reuse projects, and what other states are doing on the forefront of reuse. The Water Plan also identifies issues that must be addressed and includes well-developed key Actions to be taken to facilitate, incentivize and fund additional reuse in Colorado.

As we've noted in our past comment letters, we appreciate the Water Plan's recognition that "Widespread development of potable reuse will be an important facet of closing the future water supply-demand gap." Indirect potable reuse (IPR) is already being practiced in a few prominent projects

[1] WateReuse Association Mission: To advance the beneficial and efficient uses of high-quality, locally produced, sustainable water sources for the betterment of society and the environment through advocacy, education and outreach, research, and membership.

in Colorado. While direct potable reuse (DPR) is not in use in Colorado to date, several full-scale and pilot projects have been or are being implemented in Texas, New Mexico and California. There is an unequivocal trend toward DPR, with technologies, research, regulatory development, and on-the-ground operational experience all supporting its rapid expansion. Potable reuse addresses many of the limitations of nonpotable reuse (e.g., seasonality of demand, additional networks of distribution piping to construct and operate, etc.). While not without its own challenges, we can clearly envision a day within the Water Plan's planning timeframe where IPR is greatly expanded and DPR is a commonplace tool for meeting Colorado's future water needs.

As you prepare to finalize Colorado's first Water Plan, we hope you will incorporate the following comment, which we believe is important to ensuring Colorado is well-positioned to optimize municipal reuse to help meet future demands. In addition, we are attaching a redlined version of reuse sections of the Water Plan with suggested edits.

Expand reuse language to include both "regional" reuse and support of continued implementation of local solutions – The range of Actions described in Section 6.3.2 Reuse of the draft Water Plan are designed to advance reuse in Colorado along a variety of fronts. However we are concerned that a focus on "regional reuse" has emerged potentially to the detriment of many reuse opportunities that may not be "regional" in nature. We strongly recommend that the Water Plan language be expanded to clearly incorporate and support the continued implementation of more localized, utility-specific reuse – such as nearly all existing reuse in our state – which will be important to meeting future water demands.

To illustrate this concern, a current Critical Actions heading in Chapter 10 reads "Encourage Reuse: Encourage the development of *regional* reuse solutions to maximize fully consumable water supplies [italics added]." Similarly the first Action under that heading reads "Conduct a technical review of *regional* reuse options and provide grants to support *regional* reuse plans and projects [italics added]." While regional solutions are important and should be supported, we are concerned that only identifying regional projects in Water Plan Critical Actions without *also* recognizing the importance of more local reuse solutions could undermine the intent of maximizing reuse of fully consumable water supplies.

Colorado should indeed encourage and support collaborative regional reuse solutions such as the Water Infrastructure and Supply Efficiency (WISE) Partnership between Aurora Water, Denver Water and South Metro Water Supply Authority, which will be crucial to meeting future water demands. However it is important that the Colorado's first Water Plan also support and encourage more local reuse projects, which constitute the vast majority of existing reuse projects in the state. Most reuse in Colorado is currently undertaken by individual water treaters via exchanges of reusable return flows, reclaimed water permits, and in a few cases, by re-diverting returns flows after they have first been discharged to a stream. For many water treaters, participation in a regional solution may not be feasible or their best option for them to optimize their reusable supplies. If the intent of the Water Plan is to encourage additional reuse, both regional reuse opportunities *and* more localized, utility based reuse will be critical and should be supported.

Summary

We thank you and your staff for developing a Colorado Water Plan that recognizes the important role of reuse and that is committed to facilitating additional reuse to help meet our current and future demands. We welcome any questions or comments and would be happy to provide additional information as appropriate.

Again thank you for this opportunity and for your leadership in developing a Water Plan to guide Colorado's future.

Sincerely,

David Takeda, P.E.
President

Attached
WRCO Recommended Water Plan Edits

WateReuse Colorado

Recommended Water Plan Edits

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Actions

1. **Explore regional and expanded local reuse options:** Over the course of the next three years, the CWCB will conduct a technical review of regional reuse options in addition to the ongoing implementation of local reuse solutions and provide grants to support regional and local reuse plans and projects.
2. **Improve quantification, planning and tracking for potential reuse projects:** Over the next two years, the CWCB will conduct more research on how much water is currently being reused, how much potential there is for reuse, and how much water providers plan to reuse. As a future planning effort, regional reuse plans and projects should be explored to use economies of scale. As part of this work, the CWCB will work with partners to map all wastewater and potable infrastructure, water rights, needs, cost, and benefits to assess feasibility of potable reuse projects in Colorado. In addition, potential impacts to return flows will be examined.
3. **Clarify the regulatory environment:** Over the next two years, the CWCB and the CDPHE will work with stakeholders to examine the application of water quality regulations to reuse water to identify potential change that fosters permanent growth in the reuse of limited water supplies and that protects public health and the environment.
4. **Provide financial incentives for reuse innovation:** As recommended in the DPR white paper, over the next year, the CWCB will proactively seek applicants to use WSRA grant funds for expanded research and innovation related to the technical challenges and solutions of reuse. This includes exploring areas such as ZLD, IPR, and DPR, examining regional opportunities, increasing the reliability of the technology, on site reuse of water, development of reuse water for food crop irrigation, and the ability to share reuse water. Such research also includes support for continued development of more cost-effective and environmentally acceptable RO concentrate management techniques and the evaluation of non-RO based treatments capable of producing water suitable for DPR.[191]
5. **Encourage the Examining Board of Plumbers to adopt the International Plumbing Code to allow for graywater.** The CWCB will encourage the Colorado Plumbing Board to adopt and incorporate the appropriate graywater provisions from the chapter or appendix of the International Plumbing Code to allow for graywater piping within structures.
6. **Expand loan programs:** The CWCB will explore expanding its loan program to include loans for ~~innovative or regional~~ reuse projects. The DNR will work with the General Assembly to institute this modification during the 2016 legislative session.
7. **Support reuse education:** As recommended in the DPR white paper, the CWCB will support stronger education to describe the benefits of reuse water as an integral part of a water supply system for the potential of reuse to be fully realized. Specific recommendations are to sponsor a survey of Colorado utilities and water agencies to determine the extent to which DPR may be considered as a means to augment their legally reusable water supply portfolios and to develop a program to educate the public, elected officials and water utilities about the benefits and safety of DPR.[192] More detail regarding specific education and outreach recommendations are detailed in Section 9.5.
8. **Examine mechanisms to improve the ability to market, sell, and share reusable supplies:** Through a stakeholder process, the CWCB will investigate mechanisms to better allow for reuse water to be marketed to water providers outside a service area and could make building a reuse project more desirable.

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b. Assess Funding: Assess funding needs across multiple sectors using the BIPs and other resources as a guide (e.g., municipal, environmental, industrial, recreational, agricultural, conservation, reuse, education and outreach, among others).

Critical Actions to Encourage Reuse	Section	Partners	When	Type
1. Develop a sustainable funding plan that integrates a guarantee repayment fund, green bonds, and additional support grants and loans for the Water Supply Reserve Account (WSRA), education, conservation, reuse, alternative transfer methods (ATMs), and agricultural viability.	9.2	CWCB & Funding Committee	Near-term	Process

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b. Encourage Reuse: Encourage the development of ~~regional~~ reuse solutions to maximize fully consumable water supplies.

Critical Actions to Encourage Reuse	Section	Partners	When	Type
1. Conduct a technical review of local and regional reuse options and provide grants to support both local and regional reuse plans and projects	6.3.2, 7.3	CWCB, water providers, reuse experts	Near-term	Programmatic
2. Examine the amount of water being reused, the potential to increase reuse, and the amount of water providers plan to reuse.	6.3.2, 7.3	CWCB, water providers, stakeholders	Near-term	Programmatic
3. Improve the regulatory environment to foster permanent growth in the reuse of ~~limited~~ water supplies, while protecting public health and the environment.	6.3.2, 7.3, 9.4	CDPHE, CWCB, stakeholders	Near-term	CDPHE policy, potential legislation
4. Proactively seek applicants to use WSRA grant funds for expanded research and innovation related to the technical challenges and solutions of reuse.	6.3.2	CWCB, BRTs, reuse experts, water providers	Near-term	Programmatic

September 17, 2015

James Eklund, Director
Colorado Water Conservation Board
1313 Sherman Street
Denver, CO 80203

Re: Revised Environment Resilience Language for Colorado's Water Plan

Dear Director Eklund:

Audubon Rockies and the undersigned conservation organizations and Colorado Audubon chapters appreciate the opportunity to comment on the second draft of our Colorado State Water Plan. We would first like to thank you, your staff, and contributing agencies for your considerable work and dedication in creating our first Colorado Water Plan.

Below you will find our united comment regarding a proposed revision to the ***Environment Resilience*** language used in Chapter 6.6 and subsequently referenced in the Plan. The proposed revision is intended to provide additional depth, value and demonstrated science to the existing language.

As demand increases on river systems to supply present and future agricultural, municipal, industrial, recreational and environmental needs the language used to frame resilience is pivotal to comprehend potential responsiveness of river resources. While the current language describes resiliency as a system that can bounce back from disturbance and notes the need for measurement, it is a starting point. The proposed language incorporates needed elements of: stream ecology, watershed connectivity, and how human health and well-being are tied to ecosystem integrity. We believe Colorado must at minimum include these factors to build and track resiliency going forward.

Respectfully, we request that you consider and find worthy the proposed language to incorporate into Chapter 6.6.

- **Original Resilience Language (*Chapter 6.6 page 242-243)*:**

Resilience of a stream or watershed can be measured as an ecosystem's ability to recover function after a disturbance, whether acute or chronic[1]. The resilience of an ecosystem is a measure of its ability to absorb changes and still exist[2]. Resilient river systems provide complex and connected aquatic and riparian habitats, and support diverse, abundant, and reproducing populations of aquatic and riparian species. To determine levels of resiliency, it is necessary to identify the baseline status of these characteristics and to monitor streams and watersheds on an ongoing basis[3]. To promote environmental resiliency, planned projects and methods should incorporate the potential stressors of drought and climate change, including decreased supply and changes in runoff timing.

**Footnotes refer to Second Draft Colorado Water Plan citations for existing resilience language.*

[1] Original citation "e" See Principle 7 of the IBCC Draft Conceptual Agreement
[2] Original citation *"f"* See http://torrensresilience.org/ecological-resilience (citing Holling, C.S. 1973. "Resilience and stability of ecological systems" in: Annual Review of Ecology and Systematics. Vol 4 :1-23).
[3] Original citation *"393"* The Nature Conservancy, email message to CWCB with comments on Colorado Water Plan, June 25, 2015.

- **Proposed Revision of Resilience Language:**

Resilience of a stream or watershed can be measured as an ecosystem's ability to recover function after a disturbance, whether acute or chronic. The resilience of an ecosystem is a measure of its ability to absorb changes and return to similar levels after disturbance (McCluney 52). Resilient river systems depend upon dynamic seasonal flows (Bunn and Arthington, Fausch et al., Baron et al., Naiman, Decamps, and McClain) and provide complex and connected aquatic and riparian habitats, and support and sustain diverse, and stable populations of native aquatic and riparian species (McCluney 53). To determine levels of resiliency, it is necessary to identify the baseline status of these characteristics and to monitor stream ecological functions and watershed processes (McCluney) on an ongoing basis (Baron et al., Norris). "Human health and well-being are tied to ecosystem [integrity]" (Naiman 404). To promote environment resiliency, planned P&M should incorporate the potential stressors of drought and climate change, including decreased supply, changes in water temperature, and changes in runoff timing, duration, quantity, and quality (Fausch et al., Baron et al., MacDonnell, Rathburn et al.).

***References for Revised Environment Resilience Language:*

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Sincerely,

Audubon Rockies and our partner organizations:
American Rivers
American Whitewater
Western Resource Advocates

Colorado Audubon Chapters:
Arkansas Valley Audubon Society, membership: 600, Pueblo
Audubon Society of Greater Denver, membership: 2,930, Denver
Black Canyon, membership: 390, Delta
Boulder County Audubon Society, membership: 1,600, Boulder
Evergreen Audubon Society, membership: 399, Evergreen
Fort Collins Audubon Society, membership: 987, Fort Collins
Grand Valley Audubon Society, membership: 470, Grand Junction
Weminuche Audubon Society, membership: 225, Pagosa Springs

These Audubon chapter leaders speak on behalf of eight National Audubon Society Chapters from Colorado, which together represent **7,601** members.

CC:
Linda Bassi, Chief, Stream and Lake Protection Section
Kate McIntire, Outreach, Education and Public Engagement Water Supply Planning Section
cowaterplan@state.co.us

6.3.4 Agricultural Conservation, Efficiency, and Reuse

Introduction

This section seeks to assist Colorado's agricultural industry to be more efficient and resilient and to reduce ~~non-beneficial~~ [A1]water consumption and/or diversions without impacting statewide agricultural productivity and the environment. Opportunities to stretch water supplies to help meet future needs are explored. The discussion of agricultural water use often gets confounded by imprecise use of terms and an incomplete understanding of agricultural water systems. This section presents a basis for an analysis using a common understanding of terms.

Background on Agricultural Water Use and Losses

Where rainfall is insufficient to meet crop needs, crop irrigation is needed. The process of irrigation and the associated consumptive use (CU) and losses of water is illustrated in Figure 6.3.4-1. In some cases, a deep rooted crop may withdraw water directly from shallow groundwater areas through a natural process known as subirrigation.

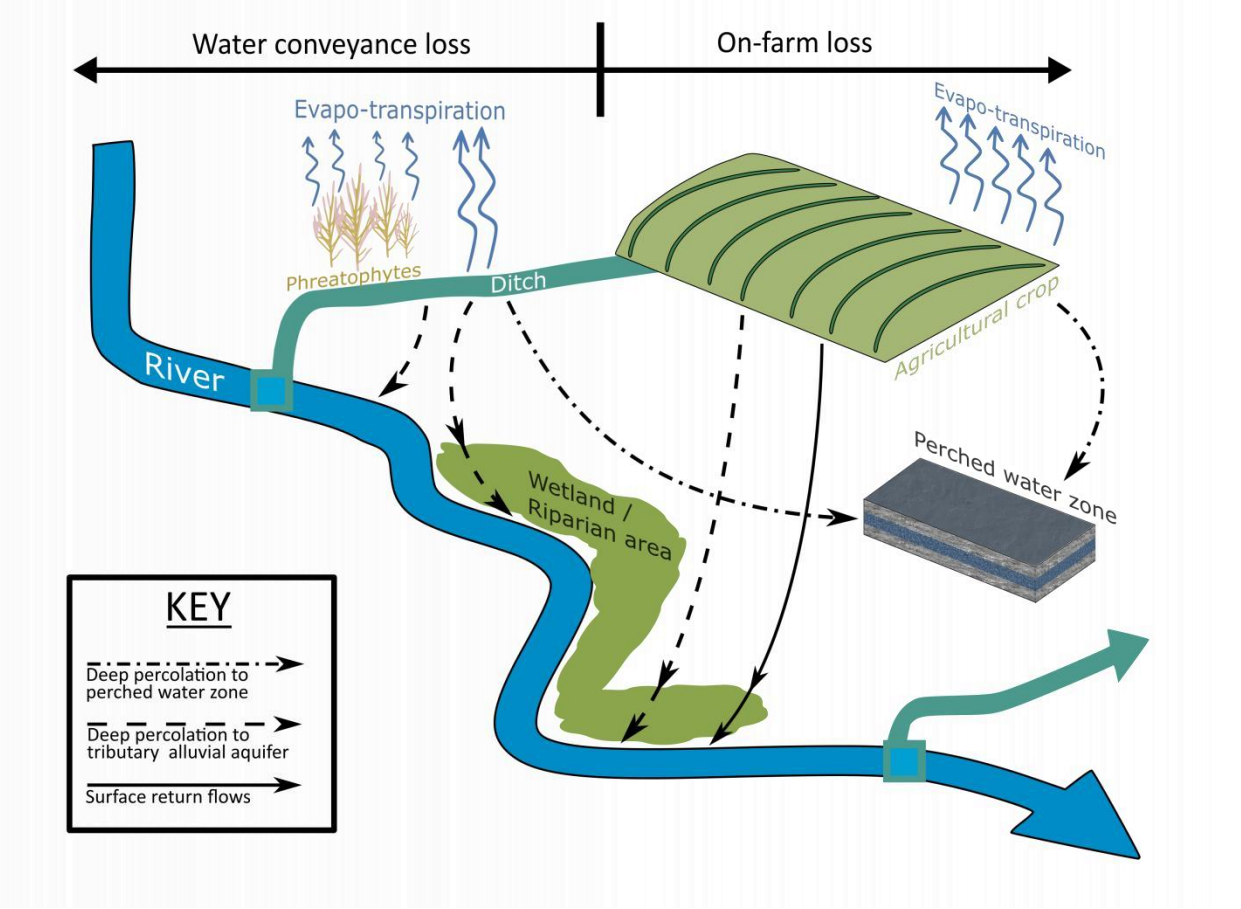
During the process of irrigation, water conveyance loss occurs when some of the water diverted via ditch or canal never reaches the crop. These losses can occur due to ditch or canal seepage where the water either returns to the stream via seepage into the local groundwater system through deep percolation, or via non-beneficial consumptive use by phreatophytes.[222] Ditch or canal seepage is considered nonconsumptive because the water returns as surface flows in the river system and is available for other users. Some conveyance loss is permanent, in which case it is frequently referred to as non-beneficial consumptive use. For example, this loss can include evaporation from exposed water or soil surfaces of ditches and canals and the unintentional growth of phreatophyte vegetation with no agricultural value. Colorado State University estimates that as much as 10 percent of the water lost during irrigation is a result these types of non-beneficial consumptive use.[223] Nevertheless, some of these unintended uses provide environmental benefits by creating wetlands and enhancing riparian corridors.

Once the water reaches the field, it is either used by the plant as a CU or it becomes part of on-farm losses. Irrigation provides water to the crop's root zone to meet crop CU, which occurs through transpiration from the growing plants and evaporation from adjacent soil surfaces. The combined effect of transpiration and evaporation is call evaportranspiration (ET). Plants transpire water during photosynthesis and also incorporate a small portion of the water into the plant tissue. Water consumed by ET is permanently removed from the local hydrologic system.[224] Because ET is equivalent to the entirety of the water used by a plant, the ~~beneficial~~ [A2]consumptive use of an irrigation water right is therefore measured by the amount of crop ET. Crop ET is not easily measured. Rather, theoretical or potential ET (the maximum amount of water a crop can consume) is calculated based on the factors that influence ET, such as crop type, growing season, and daily climatic conditions. Crop ET is measured at a specific location by adjusting for the amount of water applied to the crop.[225]

On-farm losses occur when water is applied to fields at a rate that exceeds the ability of the soil to retain the water resulting in deep percolation or surface runoff. Deep percolation into underlying groundwater systems raises the local groundwater table, thereby returning water to the surface system through stream accretions.[226] In locations where the amount of deep percolation exceeds

the ability of an aquifer to quickly transmit water back to the stream, groundwater storage occurs and produces lagged return flows. In some cases deep percolation collects in perched zones not connected to the regional groundwater system and is permanently lost to the river system as a type of non-beneficial CU. Surface runoff, on the other hand, occurs when the rate at which water is applied to a field exceeds the rate at which water infiltrates into a given soil type. Surface runoff is returned to the surface water system via waste ditches and drainage works.

Figure 6.3.4-1 Agricultural Water Use and Losses

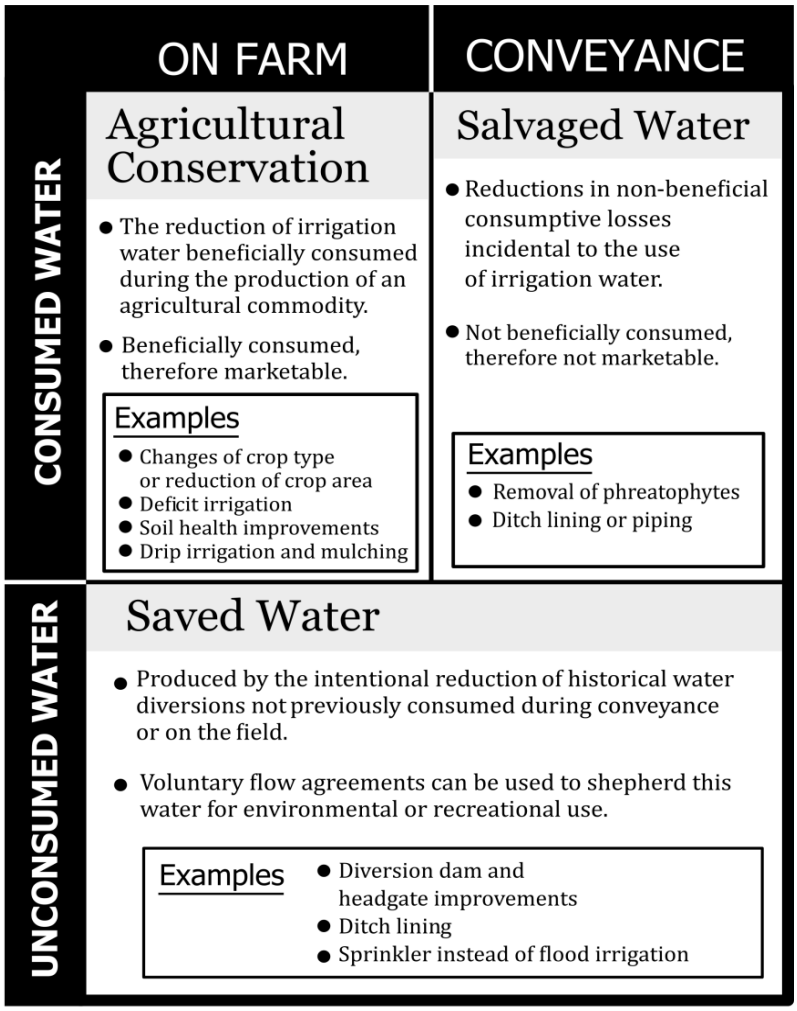


Collectively, the majority of water diverted but not consumed creates return flows to the stream.[227] Return flows are a critical component of the agricultural water balance and are rigorously protected under Colorado water law for the benefit of other users on the system.[228] Diversion of water in the stream as a result of return flows is a fundamental element of the water supply in Colorado. A portion of each subsequent diversion provides new return flows for users further downstream allowing multiple diversions of the same water within a basin.[229] In over-appropriated basins an individual molecule of water will be diverted several times before it leaves the State or is finally consumed.[230]

Terminology Related to Irrigation Efficiency

There are several terms and phrases frequently raised in discussions related to irrigation efficiency. The following definitions, in conjunction with Table 6.3.4-2, are used to provide clarity to this complex topic.

- **Irrigation Efficiency:** [A3]Irrigation efficiency is the ratio of the total amount of water diverted for an irrigation use to the volume of water beneficially consumed through ET by the crop. Irrigation efficiency may be further refined by looking at the specific water losses that occur before and after the water is applied to the crop. Thus there are often separate calculations of delivery efficiencies and onfarm efficiencies. Since it is a ratio, irrigation efficiency may be increased by practices that either reduce the amount of water consumed or diverted but not consumed. Because of this, "irrigation efficiency" is used as a general term to refer to agricultural conservation and efficiency practices on the farm and associated with conveyance.



  - **Water Conveyance (Delivery) Efficiency:** Delivery efficiency reflects seepage, evaporation, and ET losses that occur in the canals, ditches, and laterals between the point of diversion and the turnout to the farm field.[231]
  - **On-farm Efficiency:** On-farm or application efficiency reflects the losses that occur after the farm turnout as water is applied to a crop, including deep percolation, evaporation, and field runoff.[232] Application methods such as flood and furrow have higher losses than more direct methods (such as sprinklers and drip).[233] However, sprinkler and drip irrigation may allow the crop to better access water applied and increase total consumption.

- **Agricultural Water Conservation:** Agricultural water conservation is the water resulting from on-farm practices that reduce the amount of irrigation water beneficially consumed during the production of an agricultural commodity. The amount of such water can be measured as a reduction in historical consumptive use.[234] Examples of non-structural agricultural water conservation practices include changes in crop type, reduction of crop area, deficit irrigation,
and soil-health improvements that reduce evaporative loss. Because agricultural water conservation is a reduction in historical consumptive use, it is the only irrigation-efficiency

practice that can be marketed to other beneficial uses. However, there may be challenges associated with administering these water-rights transfers.

- **Salvaged Water:** Salvaged water is water lost from the consumptive use or permanent loss of water that does not provide a beneficial use. These losses are incidental to the use of irrigation water. For example, this can be ET from phreatophytes or deep percolation to a perched zone. In all cases the water is lost or consumed, although not beneficially. Salvaged water can be produced through efficiency improvements that eliminate losses that were previously consumed.[235] For example, removal of invasive phreatophytes and ditch lining or piping water could yield salvaged water.
- **Saved Water:** Saved water is produced by intentionally reducing the unconsumed portion of water diversions that otherwise provided a portion of historical return flows. Such saved water can come from either on-farm or conveyance efficiency practices that reduce losses that were not previously consumed.[236] Such water can be left in the stream, but it may not provide a benefit to environmental or recreational values without a voluntary flow agreement. Headgate improvements, ditch lining or piping, and other efficiency improvements can produce saved water.
- **Reuse:** Capturing and reusing irrigation water for crop use on the same ground, when consistent with the underlying water right, is frequently done. Because this water is also consumed it does not result in agricultural water conservation, although it may reduce the total amount of water diverted. Reuse when not consistent with the terms of a water right (such as reuse on acres not described in a decree) is considered an "expanded use," which is prohibited.[237]

  On the other hand, reuse of treated M&I water for an agricultural purpose may have the potential to reduce irrigation diversions by allowing that M&I reuse water to be used as an additional source of agricultural supply. Reuse is more fully explored in Section 6.3.2.
- **Waste:** Waste is a term that is often used pejoratively to refer to water diverted but not beneficially consumed.[238] It is frequently used in expressions such as, "by eliminating agricultural waste we can meet future needs" or "one man's waste is another man's water supply." "Beneficial use" is legally defined to be the amount of water that is reasonable and appropriate under reasonably efficient practices to accomplish without waste the purpose for which the appropriation is lawfully made.[239] The state engineer has authority to curtail truly wasteful practices and there is little waste occurring in agricultural water use. Some elements of water use that might otherwise be considered waste are important to agricultural production. For instance, water is occasionally diverted into ditches and immediately returned to the stream to sluice sediments from diversion and conveyance works. Another example is when excess water is applied to fields to leach harmful salts from the crop root zone through intentional deep percolation into the underlying water table. In areas with limited water storage availability and highly variable surface flows, some irrigators divert more water than can be used at that time by a crop in an effort to store the excess water in the soil profile. While it is a highly inefficient method of storage, for many irrigators it is the only option to mitigate future supply shortages. This practice is not considered wasteful or unreasonable under the circumstances.

- **"Use it or lose it":** The common usage of the phrase is associated with the incorrect belief that by maximizing the amount of water diverted the magnitude of a water right can be enhanced or preserved. This notion is incorrect since the true measure of the water right is actual historical beneficial CU, which in the case of an irrigation right is crop ET.[240] Thus there is no real incentive under law to divert more irrigation water than the crop will eventually consume. In addition, a water right can be abandoned or lost due to non-use for a long period of time, but only if the non-use is indicative of an actual intent to give up the water right permanently.[241] One aspect of the "use it or lose it" perception does bear further consideration. Under current law the determination of historical consumptive use is based on the amount of water actually consumed by the crop, which is the lesser amount of the water actually applied to the crop or the maximum amount a given crop could potentially consume. Thus, engaging in deficit irrigation for a period of time could reduce the transferable yield in a future change of water right case, which is a disincentive to adopting these new practices. The legislature provided partial relief to this problem in Western Colorado, via CRS 37-92-305(c), which allows for CU reductions without affecting historical CU calculations if the water user is under a conservation plan.

Benefits of Irrigation Efficiency

Irrigation efficiency can increase crop production, and enhance flows for environmental and recreational needs, and increase opportunities for water marketing through water sharing practices. Water-sharing practices are discussed briefly in this section and in further detail in Section 6.4.

Increased crop production: A large segment of agriculture in Colorado operates with a water deficit,[242] meaning that the available supply at some periods during the growing season is less than the amount needed to fully satisfy crop irrigation water requirements, (consumptive needs) at that time. Thus, the primary incentive for a producer making efficiency improvements is to satisfy a crop's water consumption by eliminating conveyance and on-farm losses, to increase crop yields. The intention of this practice is to increase crop production through increased consumptive use, and it does not create new water supplies available for other users.

Reduced vulnerability to drought: Many existing irrigation systems were constructed 80 to 100 years ago and operate relatively inefficiently. This is particularly true in Western Colorado where average irrigation efficiencies range from 26% in the Gunnison to 42% in the San Juan/Dolores. These systems operate with a water deficit, in part, because these inefficiencies stop them from conveying available water from the river to the farm gate. These issues will be exacerbated under climate change projections if water supply variability increases, droughts become more common and extreme, and runoff patterns are changed. Efficiency improvements will help shield irrigators from some of these impacts by allowing them to reduce or eliminate conveyance losses and better manage demands in conjunction with upstream storage capacity.

Enhanced flows for the environment & recreation: Refurbishing a headgate, diversion dam, or reducing diversions can increase flows below the water structure, potentially benefiting recreation and the environment. Even though this water cannot be transferred, local instream-flow benefits accrue from saved water left in the reach of the stream between the historic point of diversion and

the downstream headgate. This is limited to the location where return flows previously entered the stream. Environmental benefits of refurbished agricultural infrastructure present an opportunity for funding from state, federal, and foundation programs to contribute to the cost of efficiency changes. Environmental and recreational benefits can be enhanced and protected through a voluntary flow management program or agreement negotiated with downstream water users.

Improved water quality: One benefit from improved irrigation efficiency is improved water quality. The process of deep percolation results from delivering more water into the root zone than the soil can retain for eventual crop consumption. This water migrates into the groundwater system, often dissolving natural salts, uranium, and selenium and leaches manmade fertilizers and pesticides from the soil. These contaminant loads eventually reach the stream system, and in some cases seriously degrade surface water quality.[243] Recognition of water-quality benefits results in substantial amounts of federal funding for irrigation-efficiency improvements, which over the past several decades has rapidly accelerated the historically slow trend toward improved irrigation efficiency.

Water sharing: While there are numerous reasons and methods to improve irrigation efficiency, there are limited opportunities for true agricultural water conservation for the purpose of creating supplies that can be marketed to other users. These methods rely on either reducing crop ET, conveyance losses, or soil moisture evaporation. They can be achieved by:

- Switching crop types to those with lower ET requirements.[244] The variation in ET needs between crops can be large, with beans and small grains requiring 20 inches or less per year and corn, beets, and alfalfa needing 30 or more inches.
- Intentionally supplying less water to a given crop than its historical irrigation requirement through deficit irrigation. Deficit irrigation must result in lower crop yields to generate any salvaged water.[245]
- Reducing soil evaporative losses through improved cultivation methods such as mulching, drip irrigation, and "soil health" practices.[246]
- Temporarily and entirely removing a crop from the ground through fallowing.[247]
- Permanently and entirely removing a crop from the ground through land retirement.[248]
- Lining and/or piping ditches to reduce or eliminate evaporation, deep percolation, and consumption by non-beneficial phreatophytes.

Addressing Barriers to Irrigation Efficiency

While these techniques have been used in Colorado to address specific situations, there are legal, technical, and financial barriers that often prevent long-term new water supplies. Section 6.4 discusses how some of these techniques can be used as alternatives to traditional permanent dry up of irrigated lands.

The transfer of salvaged water (with the exception of phreatophyte removal, which has been expressly prohibited as a source of a transferable right) has not yet been tested in water court or addressed by the legislature. The volume of water resulting from any individual efficiency improvement is relatively small and difficult to precisely quantify since it cannot be measured directly. This makes reliable management and administration of exchanges and transfers of

salvaged water extremely complex and time consuming for DWR personnel. Saved water cannot easily be used to reliably provide water to the environment or recreation. There is little direct advantage for irrigators and few legal mechanisms exist to shepherd this water downstream. Water generated from agricultural conservation practices, such as deficit irrigation, rotational fallowing, or a transition to cool season crops is the subject of ATMs and is further explored in Section 6.4 of Colorado's Water Plan.

Recent cases where agricultural producers in Colorado have improved efficiencies and overcome barriers provides context to the descriptions of the agricultural efficiency concepts provided above:

- The Uncompahgre Valley Water Users Association converted portions of its open-ditch delivery system to pipelines through the Colorado River Basin Salinity Control Program,[249] thereby reducing seepage and delaying storage releases to better meet late season crop needs. This created the added benefit of reducing salt loading to and salinity of the Colorado River and improving downstream water quality. This is an example of a regional approach to addressing irrigation efficiency using state and federal funding to incentivize this work.
- Farmers in the Arkansas Basin converted thousands of acres from furrow and flood irrigation to sprinkler and drip application methods to stretch limited water supplies in a severely over-appropriated basin through the U.S. Department of Agriculture's Environmental Quality Incentives Program (EQIP). Water quality benefits are also achieved through the reduction of deep percolation and associated salt loading resulting from these practices. A word of caution applies to efficiency programs in the Arkansas River basin due to the unique terms of Article IV.D of the Arkansas River Compact, which expressly prohibits any improvements to irrigation systems that cause increased depletions at the state line. Because crops in Colorado typically do not receive the full amount of water that they can consume, most irrigation efficiency practices increase CU. Thus, producers who installed sprinklers and drip systems in the Arkansas basin are required to fully replace the increased depletions with augmentation water.
- The Grand Valley near Grand Junction is an area with adequate senior water rights where crops generally have a full supply throughout the growing season. Through federal programs, headgates and delivery systems were modernized thereby producing saved water through reduced diversions, to provide enhanced flows in the Colorado River for endangered fish species while simultaneously reducing saline return flows.
- The Rio Grande and Republican River Basins use alternate crops and fallowing to maintain a sustainable agricultural community in the face of an imbalance between legally available groundwater supplies and current levels of water use.
- The City of Aurora and the Rocky Ford Highline Canal have drought-driven temporary lease-fallow arrangements.
- The CWCB's Alternative Agricultural Water Transfer Methods Program supports pilot projects, such as the Colorado River Water Bank Working Group.[250] This Water Bank Working Group is notably exploring options for reducing irrigation demands through deficit irrigation, temporary forbearance, or other means, in order to avoid, delay, or limit

the likelihood or negative impacts of a Colorado River compact curtailment. The Water Bank Working Group work is further described in Section 6.4.

- Implementation of soil health practices such as low tillage, mulching, and cover crops (a crop planted to protect the soil) have improved the water holding capacity of the soil and reduced soil surface evaporation in many locations. These practices can reduce nonbeneficial consumptive losses as well as making more available for crop CU. One example that demonstrates the potential of these techniques is in the Rio Grande Basin, where soil health techniques were used to both reduce water consumption and increase specialty potato crop quality and yield. Rocky Farm replaced the rotation of a barley crop with a permanent cover crop, which uses less water, reduces soil moisture loss through evaporation, and adds organic matter to the soil. This, in turn, leads to increased soil moisture for the potato crop planted the following year.[251] This work is showcased in the Rio Grande Basin's education and tour program to promote soil health and other irrigation efficiency practices.

Recent Legislative Actions Related to Irrigation Efficiency

There are some existing legislative exceptions to the aforementioned limitations to agricultural conservation and efficiency, which are applicable in narrow instances, such as:

SB 05-133 provides that a western slope water rights holder will not be deemed to have abandoned his or her water right if certain conditions are met. Two conditions refer to "a water conservation program approved by a state agency and a water banking program as provided by law." These don't go as far as allowing sharing but it does provide that an owner of a water right won't lose the right if non-use stems from water conservation activities.[252]

HB 13-1130 allows a water right owner with an interruptible water supply agreement (IWSA) to request up to two additional ten-year periods for the IWSA. IWSAs enable water users to transfer a portion of their water right, called the historical consumptive use, to another water user on a temporary basis, without permanently changing the water right.[253]

SB 13-019 restricts a water judge from determining a water user's historical consumptive use based on water use reductions resulting from the enrollment in a federal land conservation program, participation in certain water conservation programs, participation in an approved land fallowing program or to provide water for compact compliance, or participation in a water banking program. Some water users may wish to reduce their water consumption in order to limit the effects of drought on stream flows. However, under current law there is a disincentive that penalizes appropriators who decrease their consumptive use of water. This legislation seeks to mitigate for this disincentive.[254]

SB15-183 allows court discretion in determining the appropriate period of record to utilize in calculating historical consumptive use in change of water rights cases.[255]

HB 15-1006 establishes a two-year grant program for invasive phreatophyte control and provided $2 million each year for administration and distribution through the Colorado Water Conservation Board.[256]

Basin Implementation Plans and Irrigation Efficiency

For 2015, each basin roundtable is formulating their own implementation plan, and several include agricultural water-conservation and efficiency goals and activities.

The BIP goals for most of the roundtables indicate that they plan on increasing efficiencies and modernizing agricultural infrastructure. Several examples of these are below:

- Arkansas Basin Roundtable: Provide increased quantities of augmentation water to comply with Division 2 rules regulating increased farm efficiencies.[257]
- Colorado Basin Roundtable: Improve agricultural efficiency, preservation, and conservation.[258]
- Gunnison Basin Roundtable: Restore, maintain, and modernize critical water infrastructure, including hydropower.[259]
- North Platte Basin Roundtable: Continue to restore, maintain, and modernize critical water infrastructure to preserve current uses and increase efficiencies.[260]
- Rio Grande Basin Roundtable: Operate, maintain, rehabilitate, and create necessary infrastructure to the Basin's long-term water needs, including storage.[261]
- South Platte/Metro Basin Roundtable: As measurable outcomes for the agriculture goal, this BIP intends to "support strategies that reduce traditional permanent dry-up of irrigated acreage through implementation of other solutions including conservation, reuse, successful implementation of local IPPs, successful implementation of ATMs, and development of new Colorado River supplies" and "support strategies to address agricultural water shortages through IPPs, new multi-purpose projects and innovative measures to maximize use of available water supplies."[262]
- Southwest Basin Roundtable: Implement efficiency measures to maximize beneficial use and production.[263]
- Yampa/White/Green Basin Roundtable: Restore, maintain, and modernize water storage and distribution infrastructure.[264]

Interbasin Compact Committee No-and-Low-Regrets Actions

As part of the IBCC's ongoing work, the IBCC is recommending that "Colorado will continue its commitment to improve conservation and reuse." As part of this draft work, recommendations for agricultural conservation and efficiency improvements for current and future agriculture were developed, which are incorporated into the actions below.

Actions

The following actions will support Colorado's agricultural industry to make it more efficient, resilient, and able to reduce water consumption without impacting agricultural productivity.

1. **Agricultural water incentive education program:** The CWCB will work in partnership with the basin roundtables, Colorado Energy Office, the Colorado Department of Agriculture, Natural Resources Conservation Service, and Colorado State University's extension program to develop a strategic education plan over the next two years. In addition to the topics

discussed in the education and assistance program discussed in Section 6.5, the following topics will be covered:

a. Agricultural water conservation: Outreach to the agricultural community about available agricultural water conservation techniques and incentives;
b. Soil health: Begin a soil health education and tour program to help growers examine ways to increase net revenues while decreasing water inputs, and in some cases water consumption;

2. **Continue to support the rehabilitation of diversions and ditches:** CWCB will continue to provide grants, loans, and technical support to refurbish diversions and ditches to generate saved water and reduce losses where there are benefits to recreation, the environment, and other consumptive water users.

3. **Voluntary flow agreements:** Over the next two years, the CWCB and the DWR will work with agricultural and environmental partners to develop model language for voluntary flow agreements paired with irrigation efficiency practices. CWCB will also provide funding, facilitation, and technical support to encourage these agreements.
4. **Removal of invasive phreatophytes:** The CWCB will support the management and removal of invasive phreatophytes through grants that use funding provided by HB 15-1006.
5. **Explore additional incentives:** Additional incentives will be explored to assist basins in implementing, where appropriate, irrigation efficiency practices and changing crops type to a lower water use crop. These incentives should first be explored through conservation demonstration and pilot projects.
6. **New agricultural lands:** The CWCB will encourage newly developed agricultural lands (currently identified in the North Platte, Yampa, and Southwest Basins) to either be very efficient or provide direct and measurable benefits to the environment.
7. **Administrative tracking:** Over the next three years, the CWCB will work with the DWR to explore the development of administrative means to track and administer agricultural conserved water for the purposes of marketing these waters.

~~7.~~8. **Improved river basin predictive models and computational tools: The CWCB will work with DWR to explore development of tools and models that can be used as an approved common baseline for water court litigants and parties to administrative change cases to rely upon for conservative estimates of consumptive use, return flows, and injury.**

Chapter 2: Our Legal and Institutional Setting

(pages 26-27)

Federal Entities:

Federal entities have several roles that relate to water-management issues in Colorado. As land managers, federal agencies provide land-use authorizations for water projects that occupy federal lands. ~~In addition, the federal agencies have many federal laws that federal agencies must comply with when they issue land authorizations for any water projects.~~ Three federal agencies own substantial tracts of land in Colorado:

- *The U.S. Forest Service (USFS)* manages national forests and grasslands~~ and has substantial land holdings in Colorado (role related to water rights described in Section 2.5)~~.
- *The U.S. Bureau of Land Management (BLM)* ~~is responsible for managing substantial public land holdings within Colorado~~.
- *The U.S. National Park Service (NPS)* manages ~~substantial land holdings within Colorado for~~ national parks and monuments (see Section 2.5 for the NPS).

In addition, ~~the~~ federal agencies ~~have many federal laws that federal agencies~~ must comply with numerous federal laws to~~when they~~ issue ~~land~~permits and other authorizations for ~~any~~ water projects. These include, for example, the Federal Land Policy and Management Act, the Endangered Species Act, the Clean Water Act, and the Wild and Scenic Rivers Act. All significant federal actions also require compliance with~~, and~~ the National Environmental Policy Act (NEPA). In addition to the land management agencies listed above, the following can all act as lead agencies responsible for NEPA compliance and ~~oversight~~other federal authorizations, and many of these agencies are responsible for compliance with land-use authorizations for water projects.

- ~~*The Environmental Protection Agency (EPA)* is the federal agency responsible for oversight of permitting related to the placement of dredged or fill material in waters of the United States, including jurisdictional wetlands under Section 404 of the CWA.~~
- *The U.S. Army Corps of Engineers (Corps)* is responsible for 404 permitting, related to the placement of dredged or fill material in waters of the United States, including jurisdictional wetlands, under the Clean Water Act (CWA) and for ~~the~~ approving uses of their federally owned flood control and water-supply facilities.

~~*The U.S. Forest Service (USFS)* manages national forests and grasslands and has substantial land holdings in Colorado (role related to water rights described in Section 2.5).~~

- *The U.S. Fish and Wildlife Service (USFWS)* manages threatened and endangered species recovery programs and regulates actions affecting threatened or endangered species listed under the ESA. This agency is responsible for determining if a project exceeds the bounds of any programmatic biological opinions regarding further water development. In addition, under the Fish and Wildlife Coordination Act, federal agencies responsible for coordinating

federal NEPA compliance must consult with the USFWS regarding the project's potential effects on threatened and endangered fish and wildlife species.

- *The Bureau of Reclamation (BOR)* is the agency that built, and now manages, several water supply and hydropower projects. In Colorado, these include Blue Mesa Reservoir and the Fryingpan-Arkansas Project. The BOR is responsible for contracting water out of these federal projects and for the use of these federally owned facilities by third parties.
- ~~*The U.S. Bureau of Land Management (BLM)* is responsible for managing substantial public land holdings within Colorado.~~
- ~~*The U.S. National Park Service (NPS)* manages substantial land holdings within Colorado for national parks and monuments (see Section 2.5 for the NPS).~~
- *The Federal Energy Regulatory Commission (FERC)* is responsible for licensing non-federal hydropower projects.

Finally, the ~~*The* *Environmental Protection Agency (EPA)* comments on NEPA documents and reviews the Corps' Clean Water Act 404 permits. ~~is the federal agency responsible for oversight of permitting related to the placement of dredged or fill material in waters of the United States, including jurisdictional wetlands under Section 404 of the CWA.~~

resources to protect its water resources. In addition, Colorado should make every effort to comply with its compact and decree obligations. While interstate compacts have been a solid foundation upon which water allocation occurs, interstate compacts have also been flexible and are able to address issues in times of drought and other unforeseen circumstances.

In working to protect the state's valuable water resources, Colorado recognizes that federal agencies ~~have a role in the~~ manage~~ment of~~ federal lands and have a role in managing water resources within the state. At the same time, the State of Colorado has vigorously defended Colorado's water allocation and management system. Colorado will continue to argue for an appropriate balance between state and federal roles in Colorado's water law and water management system.

It is important to balance and coordinate the different state and federal roles and responsibilities to remain consistent with their respective authorities and obligations. Federal statutes like ~~T~~the Wild and Scenic Rivers Act and the Endangered Species Act ~~are two federal statutes that could~~ may affect the ways in which water users develop Colorado's ~~ability to fully use its~~ compact and decree entitlements. T~~o avoid this, t~~he State of Colorado is committed to working with federal agencies to ~~ensure they~~ implement their legal responsibilities in ~~a~~ ways that ~~respects~~do not change Colorado's compact and decree entitlements and that respect Colorado's authorities to administer waters within the state, unless contrary to federal law. An example of ~~such~~ positive compromise exists ~~with~~in the Upper Colorado River Endangered Fish Recovery Program, which operates to help protect and recover endangered fish species while allowing water users to continue to develop the state's compact entitlements. The State of Colorado should continue to support such programs and explore ways to develop similar programs when appropriate. In addition, Colorado's Instream Flow Program is an effective tool used in the Upper Colorado River Wild and Scenic Rivers Act Management Plan. This Management Plan provides protection for flow related "Oustandingly Remarkable Values" associated with the Upper Colorado River, while respecting the need for water managers to have flexibility in the future. It ~~should~~can also serve as a model for future endeavors in state and federal collaboration. ~~–~~

~~**The State of Colorado will continue to assure the proper balance between the state and federal roles in Colorado's water law and water management system.**~~

~~The State of Colorado has always vigorously defended Colorado's water allocation and management system. Recently, certain federal agencies' decisions and proposed actions called into question the balance in state and federal roles as they relate to water management within Colorado. Some recent examples include: the U.S. Forest Service (USFS) position on water rights associated with ski areas within Colorado; the USFS proposed groundwater directive; and, the Bureau of Land Management (BLM) Resource Management Plans, and USFS Management Plans. In the context of these areas and other federal water related issues, the State has had to grapple with federal assertions of authority to mandate bypass flows as a resource management tool. To the extent they interfere with and potentially undermine water rights as decreed and administered within the state, Colorado~~

~~maintains that bypass flows should not be a preferred method for managing water on federal lands. Rather, before federal agencies seek to impose bypass flows as a resource management tool, they should work with the State to identify how such use will comport with the water rights administration under Colorado law. In these and other instances, Colorado is committed to ensuring that the federal and state roles in water management remain appropriately balanced.~~

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Actions

The following actions will promote continued collaboration among the State of Colorado and federal, state, tribal, and local entities on interstate and intrastate water management issues. These actions seek to protect Colorado's compact entitlements while encouraging collaborative solutions to protect existing and future uses within the state.

A. **The State will continue to uphold the prior appropriation doctrine.**

1. The Colorado Water Conservation Board (CWCB) encourages ongoing efforts to make the water court system more efficient, such as the work of the Water Court Committee of the Colorado Supreme Court. These efforts seek to make the process more efficient and easily navigated, while maintaining the protection of these important private property rights.
2. The IBCC work on potential legislative solutions suggests that broad stakeholder input is necessary to garner support for process improvements to be achieved through the legislative process. The CWCB will explore potential avenues for broad input on improvements to the water court process, be it through the roundtable and the IBCC process or other mechanisms.

B. **The State will continue to uphold Colorado's water entitlements under Colorado's compacts, equitable apportionment decrees, and other interstate agreements**.

1. The CWCB will continue to maintain a sufficient balance in the litigation fund to assure that the State has adequate resources to protect its water resources.
2. The CWCB, with support from the Attorney General's Office and the Division of Water Resources, will continue to make every effort to comply with compact and decree obligations.
3. The CWCB, in concert with the Attorney General's Office, will continue to work with federal agencies to assure that their responsibilities are implemented in a way that ~~respects~~ does not change Colorado's compact and decree entitlements and respects the state's authorities to administer waters, unless contrary to federal law ~~within the state~~.

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[Starting at page 358]

9.4 Framework for a More Efficient Permitting Process

Colorado's Water Plan advocates effective and efficient permitting in which State of Colorado agencies work together to complete their work early in the permitting process. This will provide the opportunity for state endorsement without being pre-decisional.

Introduction

Governor Hickenlooper's May 2013 Executive Order reiterated that the gap between Colorado's water supply and water demand is real and looming. While conservation is a key strategy to narrowing the gap across the state, it alone cannot solve the problem. Scenario planning indicates that at least 80 percent (350,000 acre-feet) of already planned projects need to be implemented, and many of these still need to go through the permitting process.[58] Ideally, the permitting process ensures the implementation of projects that best meet Colorado's water values—to support vibrant and sustainable cities, viable and productive agriculture, a robust tourism industry, efficient and effective infrastructure, and a strong environment. The current permitting process needs review and the Executive Order directed the CWCB to "streamline the State role in the approval and regulatory processes regarding water projects."[59]

The objective of this section is to explore how permitting in Colorado can be more effective and efficient. Tackling permitting is extremely difficult because of the complexity of the projects, the challenges in understanding and reducing environmental impacts, and the condition of many of the aquatic systems. The section describes the current permitting and licensing processes, the challenges that arise during the process, and the reforms that could make the process more efficient and effective for all parties involved. The proposed solutions focus on how the State can be more effective and eliminate and reduce redundancies. The section also touches on the benefits of cooperation among federal agencies, local governments, and stakeholders. ~~The approach described in this section allows the State to endorse a project without predetermining the outcome of an environmental permit, certification, or mitigation plan.~~

Summary of Each Process within Water Permitting

This section briefly explains the state and federal process that project proponents are required to address to complete their project. A description of entities involved in permitting can be found in Section 2.4.

National Environmental Policy Act (NEPA) Process

NEPA is a federal law that establishes a structured planning and decision making framework required for any federal decision with the potential to significantly impact the human environment. NEPA requires federal agencies to assess the environmental effects of their proposed actions before decision making. Importantly, NEPA provides opportunities for citizen involvement in government decision making through public disclosure and formal opportunities for public input as the environmental effects are evaluated.[60]

There are three situations in which a water supply project may trigger NEPA's procedural requirements:

- One or more project components will occur on federal lands (e.g: National Forest or Bureau of Land Management lands)
- The project or its components will be funded in part or whole by a federal funds; and • The project will require a federal permit or license

For water projects in Colorado, the most common federal actions that lead to a NEPA environmental review are: a Bureau Of Reclamation contract for storage of water in a facility managed by that agency, a U.S. Army Corps of Engineers (Corps) Clean Water Act (CWA) Section 404 permit, a project component that will be built on federal land, or a Federal Energy Regulatory Commission hydropower license.[61]

The NEPA process is intended to help public officials make decisions that based on an understanding of environmental consequences and take actions that protect, restore, and enhance the environment.[62] NEPA regulations instruct federal agencies to use the NEPA planning process "to identify and assess the reasonable alternatives to proposed actions that will avoid or minimize adverse effects of these actions upon the quality of the human environment" and to use all practicable means "to restore and enhance the quality of the human environment and avoid or minimize any possible adverse effects of their actions."[63] It is through public and agency input that these goals are to be achieved.

The NEPA process begins when the federal agency determines there is the need to take an action. The federal agency that needs to take action is the lead agency and is the agency responsible for compliance with NEPA. Depending on the circumstances, a joint lead agency and/or cooperating agencies can be identified to share in the responsibilities of completing NEPA environmental review. For many state water projects, an Environmental Impact Statement (EIS) process is required when a project may have significant environmental impacts.[64]

NEPA regulations direct federal agencies, to the fullest extent possible, to integrate the requirements of NEPA with other planning and environmental review procedures required by law or by agency practice so that all such procedures run concurrently rather than consecutively.[65] ~~This goal is often not met, leading to an extended, consecutive planning process.~~ To ~~successfully~~ achieve the goal of concurrent planning, the NEPA process ~~must~~ should start at the earliest possible time within the water supply project planning process and involve all interested parties in a meaningful way. It is recommended that proponents assess whether a project proposal is likely to trigger NEPA planning requirements at the start of planning and then engage the relevant federal and state agencies, as well as local governments and other interested parties, immediately. Early involvement of all such parties may also avoid having an extended consecutive planning process due to the federal agencies having to issue supplemental NEPA documents.

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The CDPHE involvement in the federal 404 permitting process has typically occurred towards the end of the permitting process. The CDPHE's participation as a cooperating agency has generally occurred after a draft EIS is issued. Additionally, the CDPHE has typically waited until the project's Record of Decision has been completed before its official 401 certification review process.

As discussed above, ~~if~~ with resources ~~are~~ prioritized for earlier state agency involvement in the federal permitting process, ~~improvements to the current state process could be implemented. The State has an obligation to not be pre-decisional in 401 certification and wildlife mitigation plan processes. However, earlier state agency involvement in the EIS process would allow for~~ the WQCD and CPW could ~~early~~ identify~~ication~~ issues and work to resolve~~ution of state~~ concerns. which should improve the ~~result in a high~~ quality of the draft EIS. ~~This early state agency involvement could be accomplished by using the steps highlighted in Figure 9.4.-3. As shown in Figure 9.4-3, the CDPHE could be involved earlier in the EIS process. In this case, much of the State's review work could be done prior, during, and immediately after the Draft EIS process.~~

September 17, 2015

James Eklund, Director
Colorado Water Conservation Board
1313 Sherman Street
Denver, CO 80203

Re: Comments on the Second draft of Colorado's Water Plan

Dear CWCB board and staff:

The undersigned conservation organizations provide the following comments on the 2nd Draft of Colorado's Water Plan (2nd Draft or 2nd Draft CWP) that was released for public review in July 2015.

We want express our appreciation to the CWCB for many substantial improvements made to the Plan since releasing the first draft in December 2014. It is clear CWCB staff has been hard at work since January, incorporating input from basin roundtables, the Inter-Basin Compact Committee, and tens of thousands of public comments that highlighted the need for greater urban conservation, healthy rivers, and water supply alternatives other than large new trans-mountain diversions.

As a result of these improvements, the Plan took many steps in the right direction, including:

- ✓ a reasonable statewide urban conservation goal of 400,000 acre-feet of savings through active municipal conservation by 2050;
- ✓ a commitment to protect Colorado's rivers and streams, through a $1 million down payment in the 2015 projects bill for stream management plans;
- ✓ a Conceptual Framework that adds substantial conditions that will apply as Colorado grows, particularly during future discussions about trans-mountain diversions; and
- ✓ a completely new Chapter 10 with a long list of action items to implement the Plan.

In the pages that follow, we provide specific edits on the topics below:

1. Municipal Conservation
2. Re-Use
3. Healthy Rivers
4. Agriculture
5. Trans-Mountain Diversions
6. Criteria
7. Permit Streamlining
8. Financing
9. Chapter 10

At the end of these comments, we provide a proposed "redline" of the action items in Chapter 10, with specific proposals to strengthen and clarify next steps. Because we believe the current list of priority actions is far too long to be a useful guide for implementation with limited resources, we suggest designating action items of "highest priority" in the next 2-3 years. We have marked these highest priorities with an asterisk (*) in a new column on the far left side of the Chapter 10 table.

1. Municipal Conservation – Chapter 6.3.1

Urban water conservation is the most important strategy for meeting Colorado's future water needs – the Governor says it this way: "every conversation about water should start with conservation." It is the cheapest, fastest, and most flexible way to meet future needs and should be prioritized above all other solutions in Colorado's Water Plan. We think the 400,000 AF goal for active conservation included in the Plan is a very strong step forward in advancing water conservation and efficiency for Colorado, but this goal is not yet up to the level desired by the conservation community and Colorado's residents.

Legislators participating in SB 115's statewide listening tour came to the following conclusion in their report to the CWCB in 2014:

> *Colorado citizens support a strong and robust statewide commitment toward achieving increased levels of municipal, commercial, and industrial water conservation as one of [the] top priorities for meeting future water demands.*[1]

This is proved out in polling data from Colorado voters and in the more than 24,000 public comments received by the Governor and Board on the previous two drafts of Colorado's Water Plan. Notably, 78% of voters prefer solving our water challenges using water conservation and recycling instead of diverting water from rivers in Western Colorado to the Front Range, and 88% of voters supports a statewide goal of reducing urban per capita use 10 percent by 2020.[2] Public comments on the Water Plan overwhelmingly ask for a 'high' water conservation goal and/or a 10 percent reduction in water use by 2020 goal. This 10% by 2020 target is comparable to the SWS high conservation scenario of saving 460,000 AF by 2050 – 60,000 AF higher than the Plan's current goal.

As defined by SWSI, a high conservation scenario is roughly equivalent to a 1% per year reduction in per person water use. Water utilities in Colorado have more than doubled this rate of savings for the past decade, and are projected to continue achieving more than a 1% per year reduction for the remainder of this decade based upon the conservation plans currently on file with the CWCB. This Colorado trend is borne out in other Western States where the USGS reports a 25% reduction in per capita use between 2000 and 2010 – a 2.5% per year decline.[3] Several of these other Western States, including Utah, Texas, and California, have already established a 1% per year or greater statewide water conservation goal. Locally, Denver Water has invested heavily in water conservation over the past several decades. Today, Denver Water uses 5% less water overall than it did in 1990 despite a population increase of more than 30%.[4]

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[1] Water Resources Review Committee. 2014. *Senate Bill 14-115 Report to the Colorado Water Conservation Board*. http://www.colorado.gov/cs/Satellite?blobcol=urldata&blobheader=application%2Fpdf&blobkey=id&blobtable=MungoBlobs&blobwhere=1252042805657&ssbinary=true

[2] Keating and Weigel. 2014. *Colorado Statewide Water Poll Key Findings*. Poll conducted September 5-8. www.waterforcolorado.org/resources.

[3] US DOI, USGS. 2014. Estimated use of water in the United States in 2010: U.S. Geological Survey Circular 1405. http://dx.doi.org/10.3133/cir1405.

[4] A. Best, *Colorado's Rapid Growth Offers a Golden Opportunity to Merge Water and Land Use*, HEADWATERS MAGAZINE (Colorado Foundation for Water Education 2015), *available at* www.yourwatercolorado.org/cfwe-education/headwaters-magazine/summer-2015-water-land-use/763-from-the-ground-up.

The existing goal for conservation in the State Plan, medium-high conservation, is too low to realize conservation's full potential. The Plan should revise Critical Action III.a to be a 460,000 AF goal for active water conservation savings. Given the increasing costs for water and rapidly shifting public preferences for heavily irrigated landscapes, Colorado can set *and achieve* a higher goal for conservation. Importantly, the State will find support for a 460,000 AF level of savings from the Southwest, Gunnison, and Colorado Basin Roundtables (all with Basin Implementation Plans calling for a high level of conservation statewide) as well as from tens of thousands of public comments.

We support all the Chapter 10 Critical Actions found within III.a on increasing municipal conservation and efficiency. We strongly agree with III.a.1 on the need for water providers to be planning and implementing conservation at the high level as a prerequisite to receive any state endorsement or financial assistance. It makes sense, therefore, to increase the goal under III.a.4 to match this expectation – under no circumstances should the current goal be reduced.

We also support several other Critical Actions that relate to water conservation, such as I.a.1 that calls for expanding CWCB's loaning ability to include conservation actions, and Chapter 6.3's call for a quadrupling of the funding available through the Water Efficiency Grant Program. In addition, we support II.b.1 and II.b.2 that follow a "one water" approach to better integrating green infrastructure and alternative on-site water sources.

Colorado must commit to using existing supplies in the most efficient manner possible before pursuing costly, damaging, and controversial diversion projects. Urban conservation decreases the need for other water supply options – be they agricultural fallowing or TMDs. Financial assistance from the State for conservation planning and implementation can help water providers achieve a higher water conservation goal than the Plan currently contains. Conservation should be the first, biggest tool out of the box, and our community will be there to help support its success.

Please see the end of these comments for redline edits on Chapter 10 and "highest priority" actions.

2. ReUse – Chapter 6.3

Reuse is an important tool for meeting future water demands at both the regional *and local* scale. As a result, we support the comments made by WateReuse Colorado [ATTACHMENT A] and make several edits in Chapter 10 to reflect the focus on both regional and local reuse.

We support increasing the incentives for reuse and re-assessing the regulatory framework (including Reg 84, to expand allowable uses while protecting public health and the environment) to accelerate the implementation of local and regional reuse.

We suggest editing a substantial portion of the paragraph found in Chapter 6.3.2 at pages 174-75:

> In Colorado, reuse water that is used for non potable uses, such as landscape irrigation, is subject to the requirements of Regulation 84, which establishes standards to protect public health and the environment. Reuse water, which is also known as "reclaimed water" is defined in Regulation 84 as "domestic wastewater that has received secondary treatment by a domestic wastewater treatment works and such additional treatment as to enable the wastewater to meet the standards for the approved uses." As briefly described in Chapter 5, Regulation 84 has adapted over the years to accommodate changes and advances in the

science of reuse water. Regulation 84 was created in 2000 and has been amended four times since then to add new uses. As Colorado plans its reuse future, continued flexibility will be paramount to addressing water resource challenges. ~~While reusing wastewater can help close the water supply gap, appropriate public health and environmental protections must remain in place. Therefore,~~ Reusing wastewater is an important tool that can help close the water supply gap, provided appropriate public health and environmental protections remain in place. With additional funding, CDPHE would be able to work with stakeholders to review regulations for reuse water to identify potential changes that protect human health and the environment while also streamlining the process for expanding the reuse of limited water supplies.

Regulation 84 is not the only controlling regulation concerning reclaimed water depending on the use. CDPHE is committed to working with stakeholders to ensure that health and the environment are protected while water reuse expands. Reuse is critical to many municipalities in addressing identified supply gaps in Colorado and to Colorado's overall effort to fill its projected water supply gap. To achieve reuse at the levels necessary for a healthy water future, Colorado will need to make~~, but without~~ significant progress on ~~the~~ easing~~e of~~ reuse implementation, including, for example, by reformulating the water quality control regulations to add new uses of treated wastewater more easily while still protecting public health~~, the gains forecasted may not be realistic. New use approval is now a process that can take multiple years and thousands of dollars for uses that are common practice throughout the U.S. and the world~~.

Table 6.3.2-1 (2d Draft at page 177) lists the no and low regrets actions for reuse, including "establishment of a statewide reuse goal w/ intermittent benchmarks" which has three sub-actions. This action is absent from the Action items at the end of the sub-chapter and absent from Chapter 10, principle 3.b (encourage reuse). Please add it there as a near term policy action for CWCB, with support of CWPDA/CDPHE, along with the next no/low regret action to "develop new incentive for reuse."

Please see the end of these comments for redline edits on Chapter 10 and "highest priority" actions.

3. Healthy Rivers – Chapter 6.6

We appreciate the fact the 2nd Draft places a greater focus on Colorado's rivers, with the proposed dedication of $1 million annually to conduct stream management plans (SMPs) and a good definition of "environmental resiliency." With regard to the latter, we endorse the key amended language that the National Audubon Society Western Rivers Action Network provided [ATTACHMENT B].

With regard to stream management plans, we endorse the proposed changes to the description that the Northwest Colorado Council of Governments provided in their recent comments. We anticipate demand for SMP funds will be great and that the fund will need to be increased in future years.

But the very fact there is a need for SMPs reveals that CWP falls well short of definitively protecting the important values, articulated in the Executive Order, of "a strong environment that includes healthy watersheds, rivers and streams, and wildlife." In short, enormous work remains to be done to identify and meet Environmental and Recreational (E&R) gaps.

CWP's Table 6.2-4 summarizes how each basin plans to meet its E&R gap. In most basins, however, fewer than half of the priority stream reaches have any known protections. While a number of BIPs (South Platte, Yampa-White-Green, Colorado, and Gunnison) indicate they plan to do additional planning, which we wholeheartedly endorse, the BIPs collectively identify relatively few projects (and cost out even fewer). Many BIPs identify *no* new E&R projects, so show no additional stream miles protected, while the majority of BIPs also made little effort to align the projects they do identify with meeting their E&R gaps (i.e., protecting the values in the priority stream reaches). And most lack a timeline for completing the evaluations needed to determine how to protect their priority reaches. If not now, then when?

It is not acceptable for Colorado to continue to have a substantial knowledge gap regarding E&R needs and solutions. Stream management plans can help, but the CWCB must also use SWSI 2016 to establish baseline conditions, develop templates for assessments and suggest replicable strategies for protecting waterbodies with priority E&R values.

Indeed, we note that the Plan (particularly Chapter 10) lacks any strong action items for addressing recreational values, which were an important part of the May 2013 Executive Order. We propose several action items that logically stem from many chapters of the 2nd Draft.

Please see the end of these comments for redline edits on Chapter 10 and "highest priority" actions.

4. Agriculture

Chapters 6.3.4 and 6.4 are greatly improved from the previous draft. Both sections have re-focused on the need to better understand the technical opportunities to conserve water in agriculture in ways that are economically reasonable and that maintain both a vibrant rural, agricultural economy and a healthy environment. However, without direct financial and legal incentives, ATMs and agricultural conservation and transfer programs that provide public benefits will almost always be less attractive to buyers and sellers than "buy and dry" transactions.

The Final Plan needs to address this inherent problem by further developing incentives and reducing transaction costs and uncertainties for preferred ATM projects. A number of these are discussed below along with some lingering technical improvements that could clarify the concepts covered in the agriculture chapters.

In Chapter 6.3.4, we propose several short but important edits [ATTACHMENT C]. At the end of that sub-section, we propose an additional action item, namely:

> **Improved river basin predictive models and computational tools:** The CWCB will work with DWR to develop tools and models that can be used as an approved common baseline for water court litigants and parties to administrative change cases to rely upon for conservative estimates of consumptive use, return flows, and injury.

For the end of Chapter 6.4, we propose a new action item, namely:

> **Develop legal, administrative, and financial incentives** to make ATMs economically competitive with, or preferred over, "buy and dry" approaches and to encourage, fast track, or otherwise prioritize ATM projects that include environmental, recreational, aesthetic, or other public benefits.

Relatedly, at the very end of Chapter 6.4, under action items to support ATM goals, the bullet

- Incorporate improved water use data into decision making processes in a way that reduces uncertainty for water managers, and develop basin specific models for use in water court cases the help reduce transaction costs.

should be edited to say:

- Incorporate improved water use data into decision making processes in a way that reduces uncertainty for water managers, and develop basin specific models for use in water court and administrative change cases the help reduce transaction costs.

Please see the end of these comments for redline edits on Chapter 10 and "highest priority" actions.

5. Trans-Mountain Diversions (TMDs)

The Conceptual Framework (CF)—found in the 2nd Draft's Chapter 8 and Appendix D—has been negotiated through two iterations over the course of the last 18 months. No one interest strongly supports every principle in its entirety, but every IBCC member and CWCB board member ultimately gave the document a thumbs up.

The CF is a *framework*, and thus neither an agreement nor a document that binds any future party. It is not self-implementing. However, it sets out several important water management strategies that Colorado must pursue regardless of whether any entity comes forward seeking to build another large new trans-mountain diversion between now and 2050. For example, the CF encourages Colorado to establish a cooperative water management program to protect existing water development from the threat of a Colorado River Compact call. Given the imbalance between supply and demand that exists today in the Colorado River Basin, Colorado water users need to create this program as soon as possible.

Similarly, conserving environmental resiliency where it now exists, and restoring critical ecosystems so that they become resilient again, is work Colorado must engage to achieve, building on current efforts, but greatly expanding them. Between multiple forces—of climate change, increased resource extraction, threats to watersheds from fire and drought, and the needs of a growing urban population—ensuring environmental resilience is the best way for Colorado to maintain its critical values and also avoid unwanted federal interference with state and local water management decisions because of environmental impacts.

6. Criteria – Chapter 9.4

We urge the CWCB to provide additional definition and clarity as to the "factors" that the State will consider in deciding whether a project warrants political or financial support from the State; we've made suggestions in prior comment letters (including one submitted by these groups May 1, 2015). In addition, given the large number of projects proposed through BIPs, these factors should help the Governor prioritize those projects where Colorado can offer meaningful support. In this fiscal climate, it would not be responsible to give blanket support to $20 Billion worth of projects. In fact, the final version of CWP should amend the critical actions to focus state resources, including the WSRA, but also all state grant and loan funding on projects that meet these factors. As noted below,

83% of costed BIP projects are multi-purpose, so having that as a criterion doesn't help winnow which projects Colorado would support.

7. Permit streamlining – Chapter 9.4

We commend the CWCB and WQCD staff for many of their suggestions to improve the regulatory process for water projects. We believe that the single most effective way to increase the efficiency and accuracy of the regulatory processes is to front-load them by encouraging applicants to sit down with regulators and stakeholders even before making a formal application. By working together to establish a common technical platform for the different, required analyses, while also listening to and responding to concerns when shaping the project, an applicant may ultimately save money, not only its own but the regulators', transforming the process from one of conflict to one of collaboration. Satisfying an applicant's water supply needs in the context of a process like a local watershed management group dynamic that also meets the needs of other local users can allow the applicant to arrive at the regulator's doors with a package of projects and methods that have broad support. Sitting down with regulators early in the process can also streamline the analyses required for successful permitting. Conservation groups should be key stakeholders.

There are a number of strategies recommended or highlighted in the 2nd Draft that we support because they could underpin the collaborative approach suggested above:

- Find ways to use Exec Order 13604 to streamline project approvals, including by using the federal dashboard, if it's available to Colorado for project permitting processes other than the initial 50 designated pilots across the country. The dashboard could be a place to share technical approaches and analyses, and even to agree on common platforms or evaluations.
- Enter into a Memorandum of Understanding with EPA to address how municipal water conservation figures into a water project's "purpose and need statement," i.e., whether conservation an alternative or should some level of conservation be factored into the calculation of need. With an open and transparent process that allows a broad group of stakeholders to weigh in on this question, such a MOU could reduce conflict and questions down the road.
- Find ways for the WQCD and CPW to participate in a robust way early in the NEPA and regulatory process, as a cooperating agency. This may require additional state resources, but should pay off by allowing the applicant to understand concerns and either broaden or narrow the scope of the analyses contemplated.
- BLM and FERC both have experience with early involvement – even before an application – where the agencies, applicant and other stakeholders meeting to discuss alternatives and hammer out differences, leads to a process that ultimately takes less time. Let's do this, if possible w/ the Corps and Reclamation. From the experience of Colorado NGOs, we believe that such a front-loading of involvement, coupled with the early development of technical data is necessary for all streamlining and would be the most useful of any other single change that Colorado's Water Plan could make happen.
- Add additional WQCD and CPW staff to allow this front-loaded process to occur.
- Expand the "project meets factors" [see comments on **Criteria**, immediately above] and then use them to focus state resources on helping projects that meet the criteria through the

permitting process (and beyond). Colorado should not "endorse" a project that fails to meet these factors.

Despite all of these many positives, we believe there are substantial legal and practical flaws in the proposal to impose a "state endorsement" step in the regulatory process. The 2nd Draft proposes to insert this step between a draft and final EIS, based on letters to the Governor from the Colorado Division of Parks and Wildlife (CPW) and the Colorado Water Quality Control Division (WQCD) that, in the case of the WQCD, would come before the agency has all necessary information to craft its 401 certification or perform the anti-degradation review (both required by the Clean Water Act) and before there has been an opportunity for public comment on either. The 2nd Draft does not provide any justification for how such early endorsements, based on a draft EIS that is, by definition, incomplete and potentially incorrect, will expedite a federal agency's issuance of the permit or license. The 2nd Draft instead asserts that an early endorsement would allow the state to apply political pressure to federal agencies to issue their permits more quickly. The 2nd Draft does not consider the potential costs of requiring the WQCD to indicate it would certify the proposed project with certain conditions based on a draft EIS. The Plan cannot ignore the potential to require re-do's, and the political, social and resource costs of having to re-do such a caveated conclusion, were the WQCD to be forced to make a decision before it's completed its analyses and process. In contrast, having the state issue its 401 certification and wildlife mitigation plan after the federal agencies issue a final EIS is something we would support.

The 2nd Draft also disappoints insofar as it does not take the opportunity to streamline the one process that Colorado entirely controls, namely the 122.2 wildlife mitigation plan process. That state process, born of the conflict over the U.S. Environmental Protection Agency's 1989 veto of a 404 permit to build Two Forks Dam and Reservoir, is ripe for an overhaul. Colorado could easily reduce the regulatory burden on project applicants by having hearings before the Wildlife Commission only if a party appeals, and by eliminating CWCB review (and hearing) entirely.

Regardless of whether the State decides to endorse a project based on a draft EIS, with all its inherent uncertainty, what seems more important would be for the state to endorse only those projects that are consistent with Colorado's values, as expressed in the Executive Order, and the "project meets factors," or what the Executive Order called "criteria." Endorsement without a demonstration that the proposed project meets the criteria would be counter-productive. It is imperative that the final version of Colorado's Water Plan require all relevant agencies to agree, publicly, that a project meets the criteria prior to state action that could be construed as support for or endorsement of that project.

Our more specific comments on **Permit streamlining** include:

1. National Environmental Policy Act (NEPA) description:

The language below suggests it's the federal agencies that cause consecutive rather than concurrent review processes. From 2d Draft Plan at page 359:

> NEPA regulations direct federal agencies, to the fullest extent possible, to integrate the requirements of NEPA with other planning and environmental review procedures required by law or by agency practice so that all such procedures run concurrently rather than consecutively. This goal is often not met, leading to an extended, consecutive planning process. To successfully achieve the goal of concurrent planning, the NEPA process must start at the earliest possible time within the water supply project planning process.

In many cases, this is not the case. Recent NEPA processes may run long – mostly because of the need to repeatedly redo NEPA analyses, with supplemental statements (e.g., there was a six-year gap between the Draft EIS and Supplemental Draft EIS for the Northern Integrated Supply Project). That is not a problem with concurrent versus consecutive processes, but rather a problem of trying to proceed with incomplete and inaccurate information, stemming from a combination of several other factors, including: lack of understanding of project scope (so as to be able to assess its full potential impacts and to identify all reasonable alternatives); insufficient early involvement of all interested parties; failure to provide regulators all necessary information; and in some cases a dispute amongst agencies regarding the appropriate technical analysis. (An example of the latter is determining the appropriate time-step for evaluating the temperature water quality standard – monthly or daily.). Analyses can and should proceed concurrently, but for obvious reasons a federal agency must wait for the analyses in NEPA to be complete before issuing a permit or other authorization.

Colorado can change whether state regulatory processes, that are required exclusively under state law, run concurrently with the federal process. However, Colorado cannot change federal law or requirements. We have proposed amending this paragraph on page 359 to read as follows:

> NEPA regulations direct federal agencies, to the fullest extent possible, to integrate the requirements of NEPA with other planning and environmental review procedures required by law or by agency practice so that all such procedures run concurrently rather than consecutively.[65] To achieve the goal of concurrent planning, the NEPA process should start at the earliest possible time within the water supply project planning process and involve all interested parties in a meaningful way. It is recommended that proponents assess whether a project proposal is likely to trigger NEPA planning requirements at the start of planning and then engage the relevant federal and state agencies, as well as local governments and other interested parties, immediately. Early involvement of all such parties may also avoid having an extended consecutive planning process due to the federal agencies having to issue supplemental NEPA documents.

2. Anti-degradation:

In terms of Clean Water Act regulatory requirements, this chapter focuses on 404 permitting and 401 certification. It still does not mention the anti-degradation review that is required for most projects (including reuse projects). This is an important part of water quality protection in a state like Colorado where many waterbodies have water quality that is better than necessary to support designated uses. Perhaps the lean process that the 2nd Draft sets out as a critical action can consider whether any changes in this process would be warranted as complementary to other changes proposed, while still maintaining the important protection this review provides.

3. Streamlined Process:

Several NGOs submitted comments to the Water Quality Control Commission for its discussion of the 2nd Draft in August 2015. The Water Quality Control Division will be submitting comments to the CWCB as a result of the Commission's discussion. We support those comments, including the amendments to the four critical actions related to water quality in Chapter 10. We especially support the proposed changes to Chapter 9.4 that would (a) clarify that no state lead agency can interfere with the Clean Water Act responsibilities of the Division and Commission, and (b) eliminate any reference to a contingent 401 certification.

We urge the CWCB to eliminate this sentence (2nd Draft, page 358): "The approach described in this section allows the State to endorse a project without predetermining the outcome of an environmental permit, certification, or mitigation plan." We also urge the CWCB to eliminate this sentence (at page 372): "[E]ach state agency would provide their recommendations to the Governor's office that could then communicate to the appropriate federal agency that the State supports . . . a given project." The 2nd Draft does not explain how early state endorsement based on incomplete, inadequate and potentially incorrect information found in a draft EIS improves the quality of the analyses or final decision, or why it would be good for the state to "encourage completion of the EIS and ROD" based on an endorsement underlain by a potentially shaky basis.

In 9.4-2 and as noted in our more general comments above, we agree that, to the extent possible given limited resources (a situation that should improve given passage of the 2015 fee bill), having earlier WQCD involvement would be good, although there is no legal mechanism for Colorado to require a federal agency draft EIS to identify water quality mitigation and enhancements. In addition, it would be at best risky and at worst irresponsible to require the WQCD provide a recommendation to the Governor that it supports the project based on a draft EIS.

Drafts are, by definition, incomplete, if not inaccurate. Making any recommendation on such shaky ground is not going to produce a better decision in less time. Rather, it risks producing a recommendation that would require too many conditions or re-openers, or would simply be wrong because it would be based on incomplete and inaccurate information. The concept of conditional certification should be eliminated from the final version of CWP. The WQCD is currently expected to issue conditional 401 certifications for Moffat Expansion and Windy Gap before the Records of Decision (based on the Final EISes); assuming the experience of doing certification this way works out, the Division can continue to issue its certifications before Records of Decision in the future.

The 2nd Draft proposes (at page 367) to "shorten the length of time to complete the required environmental reviews." We urge the CWCB not to suggest arbitrary timeframes; there is no evidence that such an approach leads to robust decision-making.

All of this process assumes that the State will substantially flesh out its so called "project meets factors" as we urge the CWCB to do elsewhere in these comments [see our comments on **Criteria**, immediately above].

As a part of actions to encourage multi-purpose projects, the 2nd Draft (at page 368) suggests exploring opportunities "to equitably allocate mitigation responsibilities." The meaning is not clear.

Finally, the 2nd Draft lacks is any meaningful streamlining of the wildlife mitigation plan process, the one piece of permitting that is wholly within the state's authority, as a state law requirement. As our earlier comments suggested, Colorado could easily streamline the wildlife mitigation plan process – by eliminating it entirely or by eliminating one or both of the automatic reviews by appointed bodies. The WQCD issues 401 certifications; there is no automatic review, although any party can appeal to the Commission. Moving to that model for wildlife mitigation plans – no automatic review by the Wildlife Commission – would save time and money – by eliminating mandatory hearings – for many applicants, especially if, as some Wildlife Commissioners have argued, their only choice at the hearing is to vote thumbs up or down on the plan. Eliminating the additional review by the CWCB would similarly save time. There is little evidence to support an argument that the CWCB review of these plans has ever added value to the outcome.

Please see the end of these comments for redline edits on Chapter 10 and "highest priority" actions and some specific suggested edits for Chapter 9 [ATTACHMENT D].

8. Financing – Chapter 9.2

The 2nd Draft takes two important new first steps on financing for non-consumptive needs, by estimating E&R needs of $2-3 billion (page 337) and by committing $1 million annually for stream management plans (pages 340 and 348). The steps, however, reveal the enormous gap between estimated E&R needs and funding to meet them. It's a vast understatement to say there remains a significant imbalance between the Colorado public's overwhelming support for protecting Colorado's rivers and the minimal funding sources available to secure that protection.

A key task for the Final Plan is to find ways to accelerate funding for identifying and implementing projects to meet non-consumptive needs, including through E&R projects. A good first step is to make additional funding available for existing programs that benefit these E&R projects, which can be supplemented as new sources of funding become available. As a result, we strongly support the recommendation to increase funding to the WSRA grant program (pages 343 and 347) to help meet additional E&R needs.

We support continued exploration of other funding ideas (many listed at pages 343 through 347), and are intrigued by the possibility of using "green bonds" in support of E&R needs (pages 344-45). Critically, representatives from interested conservation groups should be at the table for these discussions, in the "water investment funding committee," and elsewhere. To ensure this end, the roster of representatives to the water investment funding committee (final bullet on page 348) should expressly include stakeholders from conservation groups. Indeed, we assume that the IBCC would also help flesh out funding concepts.

If the CWCB is to "promote, and potentially support financially and politically, projects that evaluate water supply, storage and conservation efforts from a regional, multi-purpose, multi-partner, multi-benefit basis" (page 336), such evaluation must apply a rigorous set of criteria, note above. This is especially true because the metrics of being a "multi-purpose" project applies to 83% of costed-out projects in BIPs (see Table 9.2-1, on page 336) and thus is not an effective screen. Similarly, the very short list of "criteria" at the bottom of page 337 and top of 338 won't be enough to distinguish projects.

Please see the end of these comments for redline edits on Chapter 10 and "highest priority" actions.

9. Chapter 10

The 2nd Draft now includes a long list of action items in Chapter 10. While the vast majority are good ideas, we believe Chapter 10 must be streamlined to articulate the "highest priority" actions that will become the focus of state implementation through 2017. This requires culling the list significantly.

In the Table that follows, our proposed "highest priority" actions have an asterisk (*) in a new "high priority" (HP) column; and, throughout, we suggest edits in redline-strikeout to strengthen and clarify next steps.

I. Develop a Multi-purpose Funding Plan

a. Align Existing Funding: Align state funding policies and promote coordination among state agencies to strategically support the values identified throughout Colorado's Water Plan, such as the need for multi-purpose and multi-partner projects and methods.

HP	Critical Actions to Align Funding	Section	Partners	When	Type
*	1. Seek an amendment to expand the CWCB loan program's authority to fund treated water supply, reuse, conservation, ATM projects, environmental, and recreation projects and methods, with appropriate coordination with the other state agencies that have responsibilities regarding these kinds of projects.	9.2, 6.3.2, 6.3.1	CWCB, DNR, General Assembly, CDPHE, CWPDA, CPW	Nearterm[1]	Legislation
	2. Create a public private partnership center of excellence that models how to develop P3 agreements and explores financial incentives for regionalization.	9.2	CWCB & Funding Committee	Nearterm	Programmatic
	2. Continue and expand financial support of water quality related programming, such as nonpoint source pollution management efforts and watershed-based water quality improvement planning.	7.1, 7.2, 7.3	CDPHE, CWCB, other state agencies		Programmatic, Process
	3. Develop a common grant inquiry process coordinated across agencies for environmental and recreational projects and methods.	9.2	CWCB, CPW, DNR, CDPHE, CWPDA	Nearterm	Programmatic

Comment [A1]: If it isn't near term, it isn't critical.

[1] Near term is defined as occurring within three years following the finalization of Colorado's Water Plan.

	4. Encourage regional and multipurpose projects -and methods (taking into consideration locally identified geographic and/or seasonal gaps) that meet the factors in Chapter 9.4 by providing financial incentives such as an interest rate reduction or extended loan repayment periods.	9.2	CWCB, Water & Power Authority	Nearterm	Board policy
*	5. Continue to provide – and expand -- $1.5 million annually to support stream management and watershed plans.	9.2	CWCB & General Assembly (Projects Bill)	Nearterm	Legislation

	Critical Actions to Align Funding	Section	Partners	When	Type
	~~6. Investigate the potential for the CWCB to become a project beneficiary through an arranged partnership for projects that are central to fulfilling the goals of Colorado's Water Plan.~~	~~9.2~~	~~CWCB~~	~~Midterm[1]~~	~~Programmatic~~

Comment [A3]: Eliminate mid-term actions from this list, which must be focused on what the state can do now. If in fact there are routine updates to CWP, mid- and long- term actions would appear there.

Comment [A2]: Too vague and too broad. If there is a specific project that arises in teh future that requires CWCB participation, Colorado can have a discussion around that project then.

[1] ~~Mid-term is defined as occurring within six years following the finalization of Colorado's Water Plan.~~

b. Assess Funding: Assess funding needs across multiple sectors using the BIPs and other resources as a guide (e.g., municipal, environmental, industrial, recreational, agricultural, conservation, education and outreach, among others).

HP	Critical Actions to Assess Funding	Section	Partners	When	Type
*	1. Develop a sustainable funding plan that integrates a guarantee repayment fund, green bonds, and additional ~~support~~ grants and loans for ~~the Water Supply Reserve Account (WSRA), education, conservation, alternative transfer methods (ATMs), and agricultural viability~~projects and methods that meet the state support factors in Chapter 9.4.	9.2	CWCB & Funding Committee	Nearterm	Process
	2. Assess funding needs ~~across multiple sectors as part of~~to meet Colorado's priority water supply gaps in SWSI, using the BIPs and other resources as a guide.	9.2	CWCB	Nearterm	Programmatic
	~~3. Determine the economic benefits and impacts of meeting or not meeting Colorado's future water needs as part of SWSI.~~	~~9.2~~	~~CWCB~~	~~Nearterm~~	~~Programmatic~~

Comment [A4]: All funding should be focused on projects that meet criteria.

Comment [A5]: Too broad and speculative to be a high priority.

c. Explore New Funding Opportunities: Develop near-term funding opportunities that maximize the smallest amount of funds possible to have the greatest benefit to implementing Colorado's Water Plan.

HP	Critical Actions to Explore New Funding	Section	Partners	When	Type
	1. In order to support the integrated funding plan, identify and determine a path to develop a new viable public source of funding~~, such as through a container fee ballot initiative~~.	9.2	CWCB & Funding Committee	Nearterm	Process, possible legislation & ballot initiative
	2. Establish a state repayment guarantee fund.	9.2	CWCB & General Assembly	Nearterm	Legislation

Comment [A6]: Best to be general rather than specific, as previous bottle-bill measures failed to get legislative support.

Comment [A7]: Is this dependent on #1? If not, should explain source of funds.

	3. Develop issuance and repayment strategies needed to establish a green bond program to provide a funding source for large environmental and recreational projects.	9.2	CWCB & General Assembly (Projects Bill)	Nearterm	Legislation
	~~4. Fund a water education and outreach grant program based on basin roundtable education action plans and the initiatives indicated in Colorado's Water Plan.~~	~~9.2, 9.5~~	~~CWCB & General Assembly (Projects Bill)~~	~~Nearterm~~	~~Legislation~~
*	5. Provide additional statewide account funds to the WSRA program to ensure that the WSRA is funding the highest priority projects that meet the state support factors in Chapter 9.4.	9.2	CWCB & General Assembly	Nearterm	Possible legislation
	6. Modify Colorado's statutes to clearly allow for public private partnerships for water projects (§C.R.S. 43).	9.2	CWCB, DNR, WRRC	Nearterm	Legislation
	~~7. Explore a tax credit for homeowners who install efficient outdoor landscapes and irrigation as part of the integrated funding plan.~~	~~9.2, 6.3.1~~	~~CWCB & Funding Committee~~	~~Midterm~~	~~Process~~

Comment [A8]: CWCB has used, and can continue to use existing funds for these activities.

II. Promote Multi-purpose Initiatives

a. Improve Permitting Processes: Advocate for more effective and efficient permitting in which state agencies work together to complete their work early in the permitting process.

This will provide the opportunity for state endorsement without being pre-decisional.

HP	Critical Actions to Improve Permitting	Section	Partners	When	Type

	1. Conduct a series of lean events with permitting agencies and stakeholders to determine how to make permitting more efficient and effective.	9.4	CWCB (host), local, state, federal, & ~~partners~~ stakeholders	Nearterm	Process
	Critical Actions to Improve Permitting	**Section**	**Partners**	**When**	**Type**
*	~~2. Create a permitting handbook to guide applicants and other interested parties through the permitting process.~~Flesh out "project meets factors" to apply before any state endorsement occurs, and before the state commits financial or political resources to the project.	~~9.4~~	~~State and federal permitting agencies~~	~~Nearterm~~	~~Programmatic~~
*	3. Relevant state agencies will actively participate as a cooperating agency in federal NEPA permitting processes at the outset of the regulatory process to engage in scoping, developing alternatives, determining methodologies and data gaps, and developing mitigation and enhancement plans.	9.4	~~All state agencies w/ permitting authority on a project~~WQCD, CPW	Nearterm	Programmatic
	4. Enter into Memorandum of Understanding to coordinate processes ~~W~~where more than one state agency has jurisdiction over a particular issue (e.g., fish health), ~~a lead state agency will be identified~~.	9.4	~~State agencies w/ permitting authority~~WQCD, CPW	Nearterm	Programmatic
	5. Explore options for adding resources to support a more efficient and effective permitting process.	9.4	State agencies w/ permitting authority, General Assembly	Nearterm	Possible legislation
*	6. ~~Determine how Colorado will endorse a project after preliminary or contingent 401 certifications and fish wildlife mitigation plans are completed.~~ Convene stakeholder group to discuss overhaul of 122.2 wildlife mitigation plan statute.	9.4~~, 6.3.1~~	~~State agencies w/ permitting authority, local governments,~~ CPW, CWCB, stakeholders	~~Midterm~~ Nearterm	~~State policies,~~ ~~p~~Possible legislation

Comment [A9]: These are complete or in progress and don't need to be included here.

Comment [A10]: If final version of CWP does not do this, it must happen early in 2016.

b. Promote Protection and Restoration of Water Quality: The protection and restoration of water quality should be a key objective when planning for Colorado's current and future consumptive, recreational, and environmental water needs.

HP	Critical Actions to Address Water Quality	Section	Partners	When	Type
	1. Integrate water quality and quantity management by supporting initiatives to improve joint problem solving, including taking a watershed approach, and by evaluating water quality impacts from ~~BIP proposed~~ likely projects and methods, exploring graywater and reuse potentials, and supporting green infrastructure. Use WQCD letter language.	7.3	CDPHE, CWCB, other state agencies	~~Midterm~~ Nearterm	Programmatic, Board policy, Process
	Critical Actions to Address Water Quality	**Section**	**Partners**	**When**	**Type**
	~~2. Support policy initiatives which relate to quality and quantity integration, such as appropriate modification of regulation and guidance documents, creative and solution-oriented actions, and greater understanding of stormwater and wastewater impacts.~~	~~7.3, 7.2~~	~~CDPHE, CWCB, other state agencies~~	~~Midterm~~	~~Programmatic~~
	~~3. Continue and expand financial support of water quality related programming, such as nonpoint source pollution management efforts and watershed-based water quality improvement planning.~~	~~7.1, 7.2, 7.3~~	~~CDPHE, CWCB, other state agencies~~	~~Midterm~~	~~Programmatic, Process~~
	~~4. Support stakeholder and public outreach efforts to meet the integration goal, encouraging a watershed approach for engagement on water quality issues and monitoring public opinion on water quality issues.~~	~~7.3~~	~~CDPHE, CWCB, other state agencies~~	~~Midterm~~	~~Programmatic, Process~~

Comment [A11]: All mid-term, so not critical in short-term

c. Facilitate Alternative Transfer Methods: Respect property rights and the contributions of the agricultural industry by maximizing options for alternatives to permanent farmland dry-up to share 50,000 acre-feet annually within the next decade.

HP	Critical Actions to Water Sharing	Section	Partners	When	Type

	1. Support the maximum use of water rights by exploring opportunities to create more flexibility for various types of water transfers	6.4	CWCB, DWR, Stakeholders	Nearterm	Process
*	2. Organize and conduct regional workshops with partners or cosponsors to share lessons learned on actual ATM projects, and to garner additional interest in the pilot program by discussing benefits.	6.4	CWCB, partners	Nearterm	Programmatic
	3. Explore expanded grant funding that supports implementing actual ATM projects, related infrastructure, or entities that would help facilitate alternative transfer methods.	6.4	CWCB, BRTs, DWR, Stakeholders	~~Midterm~~ Nearterm	Process

d. Meet Colorado's Water Gaps: Use a grassroots approach to formulate projects and methods that avoid some of the undesirable outcomes of the supply-demand gaps. The plan addresses the gap from multiple perspectives (e.g., water storage, reuse, recycling, integrated water management, restoration and conservation).

HP	Critical Actions to Meet Water Gaps	Section	Partners	When	Type
*	1. Support and assist the basin roundtables, including by development of guidelines for WSRA grants and for prioritization, in moving forward ~~the~~ priority municipal, industrial, environmental and agricultural projects and methods identified in their BIPs that meet the factors for state support in Chapter 9.4 through technical, financial and facilitation support when requested by a project proponent.	6.5, 6.6	CWCB, BRTs	Nearterm	Programmatic
	~~2. Develop guidelines for basin roundtable WSRA grants to help facilitate the implementation of the BIPs.~~	~~11~~	~~CWCB, BRTs~~	~~Nearterm~~	~~Programmatic~~

Comment [A12]: Merged into previous

e. Promote Additional Storage and Infrastructure: Assess and promote opportunities for multi-purpose and multi-partner storage projects that address strategic needs.

HP	Critical Actions to Promote Storage	Section	Partners	When	Type

	1. Provide financial support to technical and practical innovations in the use of aquifer storage and recovery where it is practicable.	6.5	CWCB	Ongoing	Programmatic
	2. Assess ~~storage~~ water retention opportunities (including non-traditional, distributed storage that works by improving soil health or increasing infiltration) ~~to determine where existing storage can and should be expanded or rehabilitated~~ to prepare for climate change, improve sharing and use of conserved water, and meet Colorado's compact obligations.	6.5	CWCB, DWR, local partners	Nearterm	Programmatic
	Critical Actions to Promote Storage	**Section**	**Partners**	**When**	**Type**
	~~3. Prioritize grants and loans to support the implementation of BIP identified multi-purpose projects and methods, taking into consideration locally identified geographic and/or seasonal gaps.~~	~~6.5, 6.6~~	~~CWCB, BRTs~~	~~Nearterm~~	~~Funding~~
	4. Explore and support opportunities to increase benefits to environmental and recreational values associated with existing and planned storage and infrastructure projects and methods.	6.5, 6.6	Project sponsors, CWCB, BRTs	~~Midterm~~ on-going	Programmatic

Comment [A13]: Merged into II.d.1, above.

Comment [A14]: If other critical actions focus future support on projects & methods that meet the Chap 9.4 criteria, which require incorporation of E&R protect and benefits, this action is redundant.

III. Promote Vibrant and Sustainable Cities

a. Increase Municipal Conservation and Efficiency: Reduce Colorado's projected 2050 municipal water demands by 460,000~~400,000~~ acre-feet through active conservation, while preserving the contribution of urban landscape to vibrancy and sustainability.

HP	Critical Actions to Increase Conservation	Section	Partners	When	Type

*	1. Require water providers to conduct comprehensive integrated water resource planning using the water conservation best practices at the high customer participation levels where possible, as defined in SWSI.	6.3.1, 9.4	CWCB, other permitting agencies, stakeholders	Nearterm	Policy
	~~2. Provide funding, technical support, and training workshops to assist water providers with managing systems more efficiently, including techniques such as water budgets, smart metering, comprehensive water loss management programs, and improved data collection.~~	6.3.1	CWCB, CDPHE, CWAPA, water providers, conservation professionals	Nearterm	Programmatic
	3. Support legislation that would require retailers to only sell irrigation technologies that meet WaterSense specifications by providing technical details on the potential savings and hosting a stakeholder process.	6.3.1	CWCB, DNR, General Assembly, stakeholders	Nearterm	Process, possible legislation
	4. ~~Adopt a stretch goal to encourage demand-side innovation that places Colorado at the conservation forefront.~~ Support a stakeholder process that examines options for local water providers to establish targets consistent with the stretch goal and the amount of savings possible given past work and local opportunities.	6.3.1	CWCB, stakeholders	Nearterm	Board policy, programmatic
	~~5. Host a stakeholder process to explore financial incentives for outdoor water conservation measures, such as a tax credit program to incentivize retrofitting higher water landscapes with lower water landscapes and more efficient irrigation systems.~~	~~6.3.1, 9.2~~	~~CWCB, stakeholders~~	~~Midterm~~	~~Process~~

Comment [A15]: The State already does this now.

Comment [A16]: CWP establishes a stretch goal, so this sentence is unnecessary.

Comment [A17]: If it's mid-term, it isn't critical

b. Encourage Reuse: Encourage the development of regional and local reuse solutions to maximize fully consumable water supplies.

HP	Critical Actions to Encourage Reuse	Section	Partners	When	Type

	1. Conduct a technical review of regional and local reuse options, including through the use of innovative technologies, and provide grants to support regional and local reuse plans and projects	6.3.2, 7.3	CWCB, water providers, reuse experts	Nearterm	Programmatic
*	2. Examine the amount of water being reused, the potential to increase reuse, and the ~~amount~~ number of water providers that plan to reuse~~, and use these data~~ to establish a statewide reuse goal with intermediary benchmarks.	6.3.2, 7.3	CWCB, water providers, stakeholders	Nearterm	Programmatic
*	3. Improve the regulatory environment and create incentives to ~~foster~~ encourage ~~permanent~~ growth in the reuse of ~~limited~~ water supplies, while protecting public health and the environment.	6.3.2, 7.3, 9.4	CDPHE, State Engineer, CWCB, stakeholders	Nearterm	~~CDPHE policy~~Administrative policies, potential legislation
	4. Proactively seek applicants to use WSRA grant funds for expanded research and innovation related to the technical challenges and solutions of reuse.	6.3.2	CWCB, BRTs, reuse experts, water providers	Nearterm	Programmatic
	5. Develop new incentives for reuse.	6.3.2	CWCB, water providers	Nearterm	Programmatic

c. Integrate Land Use and Water Planning: Initiate the use of local land use tools, where appropriate, to reduce water demands for municipalities, and the need to urbanize agricultural lands.

HP	Critical Actions to Integrate Land Use	Section	Partners	When	Type

	1. Through voluntary trainings for local governments, encourage the incorporation of best management practices in land use for water demand management, water efficiency, and water conservation.	6.3.3	CWCB, DOLA, stakeholders	Nearterm	Programmatic
*	2. Develop new guidance to require the incorporation of land use practices into water conservation plans.	6.3.3	CWCB, DOLA	Nearterm	Programmatic
	3. Conduct lean event to ~~Examine~~find ~~barriers in state law for~~ways to improve integration~~ing~~ of water and land use planning and solutions, such as for gray water, green infrastructure, and green buildings.	6.3.3, 7.3	CWCB, DOLA, State Plumbing Board, stakeholders	~~Midterm~~ Nearterm	Programmatic

IV. Address Agricultural Viability and Efficiency

a. Maintain Agricultural Viability: Maintain Colorado's agricultural productivity, support of rural economies, and food security (through meaningful incentives and grassroots efforts).

HP	Critical Actions to Maintain Ag.	Section	Partners	When	Type
	1. Establish an education and assistance program for farmers and ranchers to help realize more transactions that allow for water sharing ~~and for new Colorado farmers to own land~~.	6.5	CWCB, Colorado Dept. of Agriculture	Nearterm	Programmatic
	~~2. Host a stakeholder group to help develop a framework for an evaluation of agricultural transfers from a technical and legal perspective.~~	~~6.5~~	~~CWCB (host), local government, ag. producers, municipalities, environmental interests~~	~~Nearterm~~	~~Process~~

Comment [A18]: Seems a bit far afield for Colorado's water plan.

Comment [A19]: Not sure what this adds.

	3. Encourage ditch-wide and regional planning to explore system-wide conservation and efficiency opportunities, the potential for water sharing, and long-term infrastructure maintenance needs.	6.5, 6.3.4	CWCB, agricultural partners, BRTs	Nearterm	Programmatic
*	4. Provide grants, loans and technical support to ~~U~~update and improve Colorado's aging agricultural infrastructure, especially where improvements generate saved water and reduce losses in locations that would provide~~could~~ benefit to other sectors.	6.5, 6.3.4	CWCB, BRTs, agricultural partners, other stakeholders	~~Midterm~~ Nearterm	Programmatic
*	5. **Develop legal, administrative, and financial incentives** to make ATMs economically competitive with, or preferred over, "buy and dry" approaches and to encourage, fast track, or otherwise prioritize ATM projects that include environmental, recreational, aesthetic, or other public benefits.	6.4	CWCB, DWR	Nearterm	Programmatic

b. Support Agricultural Conservation and Efficiency: Support Colorado's agricultural industry to make it more efficient, resilient, and able to reduce water consumption without impacting agricultural productivity.

HP	Critical Actions to Support Ag. Conservation and Efficiency	Section	Partners	When	Type
	1. Develop a strategic education program to promote agricultural water conservation and soil health initiatives.	6.3.4, 6.5	CWCB, BRTs, Colorado Energy Office, CDA, NRCS, CSU extension, ag. partners	Nearterm	Programmatic

*	2. Provide grants, loans, and technical support to refurbish diversions and ditches to generate saved water and reduce losses where there are benefits to recreation, the environment, and other consumptive water users.	6.3.4	CWCB, ag. partners, local environmental groups, BRTs	Nearterm	Programmatic
	3. Develop model voluntary flow agreement language, facilitation, and technical support to encourage the use of these agreements when paired with irrigation efficiency practices.	6.3.4	CWCB, DWR, agricultural partners, environmental groups, BRTs	Nearterm	Programmatic, state agency policies
	~~4. Support the management and removal of invasive phreatophytes with a newly established grant program.~~	~~6.3.4~~	~~CWCB, local partners~~	~~Nearterm~~	~~Programmatic~~
	5. Explore the development of administrative means to track and administer agricultural conserved water ~~for the purposes of marketing these waters~~.	6.3.4	DWR, CWCB	~~Midterm~~ Nearterm	Process
*	**6. Improved river basin predictive models and computational tools:** The CWCB will work with DWR to explore development of tools and models that can be used as an approved common baseline for water court litigants and parties to administrative change cases to rely upon for conservative estimates of consumptive use, return flows, and injury.	6.3.4	DWR, CWCB	Nearterm	Programmatic

Comment [A20]: Not clear where $ would come from that wouldn't compete w/ other asks in CWP.

V. Support a Strong Environment and a Robust Recreation Industry

a. Recover Imperiled Species: Promote restoration, recovery, and resiliency of endangered, threatened, and imperiled aquatic and riparian dependent species and plant communities.

HP	Critical Actions to Recover Imperiled Species	Section	Partners	When	Type

	1. Support and participate in collaborative approaches to ~~Endangered Species Act issues to~~ prevent listings under the Endangered Species Act, promote the sustainability of endangered, threatened and imperiled aquatic and riparian-dependent species and communities (e.g., recovery programs, cooperative agreements, and other efforts).	6.6	CWCB, CPW, other agencies and stakeholders	Ongoing	Programmatic
	2. Establish and achieve measurable outcomes for federally and state listed endangered, threatened, and imperiled species by developing a plan that compiles and develops near-term projects and methods. At the same time, the CWCB will support the strategic implementation of currently identified projects with technical and financial assistance.	6.6	CWCB, Colorado Parks & Wildlife, BRTs, other agencies, and stakeholders	Nearterm	Programmatic

b. Enhance Environmental and Recreational Economic Values: Protect and enhance economic values to local and statewide economies derived from environmental and recreational water uses, such as fishing, boating, waterfowl hunting, wildlife watching, camping, and hiking.

HP	Critical Actions to Enhance Economic Values	Section	Partners	When	Type
	Using existing information, as well as the information developed in SWSI 2016 and stream management plans, ~~Develop a plan that~~ compile~~s~~ and fund the development of ~~s~~ near-term projects and methods to support economically important water-based recreation.	6.6	CWCB, BRTs, interested stakeholders	~~Midterm~~ Nearterm	Programmatic
*	Compile and fund the development of economic impact data relative to state-wide non-consumptive river-based recreation	5	CWCB, OEDIT, BRTs, interested stakeholders	Near-term	Programmatic
	Support legislation that would clarify the public's ability to use natural waterways of the State for river-based recreation, and encourage private landowners to permit recreational use of waters that cross private lands.	9	CWCB, DNR, General Assembly, interested stakeholders	Near-term	Legislation

Comment [A21]: The proposed actions, below, would move forward on meeting critical recreational needs.

	Require the integration of safe downstream boat / fish passage at diversion structures.	6.6	CWCB, DWR, municipalities, interested stakeholders	Near-term	Board Policy
	Support legislation that would amend existing statutes to eliminate the requirement of a control structure associated with Recreational In-channel Diversions	6.6	CWCB, DWR, General Assembly, interested stakeholders	Near-term	Legislation
	Encourage the application of "optimal" flows for recreation associated with Recreational In-Channel Diversion rights, and fund the study of flows and recreational quality to help identify "optimal" flows that provide the greatest benefit to recreational uses and demands.	7.1	CWCB, DNR, General Assembly, interested stakeholders	Near-term	Board Policy, legislation
	Fund and encourage the evaluation of "Boatable Days" as a common metric for quantifying the impact or enhancement to recreational whitewater boating opportunities for future projects	5	CWCB, DNR, interested stakeholders	Near-term	Programmatic

c. Protect Healthy Environments: Understand, protect, maintain, and improve conditions of streams, lakes, wetlands, and riparian areas to promote self- sustaining fisheries and functional riparian and wetland habitat to promote long-term resiliency.

HP	Critical Actions to Protect Environments	Section	Partners	When	Type
*	1. Develop stream management plans for priority streams identified in a BIP or otherwise as having environmental or recreational value. As part of this work, the CWCB will provide guidelines and templates for developing stream management plans, and will conduct ongoing analyses through SWSI.	6.6, 7.1, 9.2	CWCB, BRTs, other stakeholder groups	Beginning near-term	Programmatic

*	2. Institute policies, criteria, and programmatic approaches to proactively developing projects and methods ~~that strategically address important aquatic, riparian, and wetland habitats~~to meet the environmental and recreational gaps, beyond what the BIPs include~~with existing programs~~.	6.6	CWCB, other state agencies, BRTs, other interested stakeholders	Near-term	Programmatic
*	3. In SWSI, ~~D~~develop common metrics for assessing the health and resiliency of watersheds, rivers, and streams.	6.6	CWCB, CPW, other state agencies, BRTs, stakeholders	~~Mid-term~~ Nearterm	Programmatic

VI. Prepare for an Uncertain Future

a. Plan for the Future: Coordinate and sequence updates to SWSI, the BIPs, and future iterations of Colorado's Water Plan to represent the most up-to-date technical, stakeholder, and policy information available.

HP	Critical Actions to Plan for the Future	Section	Partners	When	Type
	~~1. Monitor critical drivers of water supply, demand, and other stressors through future SWSI updates and other technical work.~~	~~6, 7, 8, 9~~	~~CWCB, other state agencies, BRTs~~	~~Midterm~~	~~Programmatic~~
	~~2. Support BIP updates of basin roundtable policies, public input, and project and method updates in a sequenced schedule through funding and technical support.~~	~~6.2, 6.5, 6.6, 8~~	~~CWCB, other state agencies, BRTs, IBCC, Coloradans~~	~~Midterm~~	~~Programmatic, Board policy~~
	~~3. Continue to use and promote scenario planning and the use of adaptive strategies.~~	~~6.1, 6.2~~	~~CWCB, other state agencies, BRTs, IBCC~~	~~Midterm~~	~~Programmatic~~

Comment [A22]: Don't disagree with planning for the future, and improving the products, but the critical actions should focus on the near term.

	~~4. Continue development of Colorado's Decision Support Systems to be the most up-to-date and technically sound resource for data-driven planning and decision making.~~	~~6.1~~	~~CWCB, other state agencies~~	~~Midterm~~	~~Programmatic~~

b. Protect and Restore Critical Watersheds: Protect and restore watersheds critical to water infrastructure, environmental, or recreational areas.

HP	Critical Actions for Watersheds	Section	Partners	When	Type
	1. Provide technical and financial support to local stakeholder groups to develop watershed master plans for watersheds critical to consumptive or nonconsumptive water supply and quality.	6.6, 7.1, 7.3	CPW, CDPHE, CWCB	Nearterm	Programmatic
	2. Prioritize and implement projects identified in master planning efforts.	6.6, 7.1	CPW, CDPHE, CWCB & local coalitions	Ongoing	Programmatic

c. Prepare for and Respond to Natural Disasters: Colorado's Water Plan promotes water resource resilience from natural disasters through strategic preparedness and response.

HP	Critical Actions for Natural Disasters	Section	Partners	When	Type
	1. Provide tools and resources to actively encourage local communities to develop drought preparedness plans.	7.2	CWCB	Nearterm	Programmatic

	2. Implement the actions identified in the Colorado Resiliency Framework to build communities that are more resilient to natural disasters	7.2	Local communities, CWCB, Colorado Recovery & Resiliency Office	Nearterm	Programmatic

d. Protect Compact Entitlements and Manage Risks: Protect Colorado's ability to fully develop compact entitlements, and continue to support agreements that strengthen Colorado's position in interstate negotiations while ensuring the long-term viability of Colorado's interstate compacts and relationships. Focus planning efforts on maintaining healthy systems and avoiding a Colorado River Compact deficit rather than on responding to compact curtailment.

HP	Critical Actions to Protect Compacts and Manage Risk	Section	Partners	When	Type
	~~1. Protect the ability to fully develop Colorado's compact entitlements by working with federal, state, and local stakeholders and maintaining the litigation fund.~~	~~8, 9.1~~	~~CWCB, AGO, DWR, downstream states, federal agencies~~	~~Ongoing~~	~~Programmatic, Board policy~~
*	2. ~~Continue to comply with Colorado's compacts and equitable apportionment decrees and support strategies to proactively manage compact obligations~~Develop a cooperative water management program for the Colorado River Basin as envisioned in the Conceptual Framework, to help Colorado continue to comply with the Colorado River Compact~~.~~	9.1	CWCB, AGO, DWR, downstream states, federal agencies	~~Ongoing~~ Nearterm	Programmatic, Board policy

Comment [A23]: The CWCB and Colorado AG already see this as a core mission, so it isn't a critical new action.

Comment [A24]: This is ongoing, and so could be eliminated on same rationale as immediately above, but focus on new cooperative management plan for CO River basin makes it a new action.

	3. Work with federal agencies to assure that their responsibilities are implemented in a way that respects Colorado's compact and decree entitlements and authorities to administer waters within the State.	9.1	CWCB, AGO, DWR, downstream states, federal agencies	Ongoing	Programmatic, Board policy
	~~4. Monitor the ongoing conceptual framework discussion and consider adopting the conceptual framework~~	~~8~~	~~CWCB~~	~~Nearterm~~	~~Board policy~~
	~~5. Prioritize the development of a programmatic approach to prevent a Colorado River Compact deficit.~~	~~8, 9.1~~	~~CWCB, other Upper Division States, stakeholders~~	~~Nearterm~~	~~Programmatic, policy, and funding~~

Comment [A25]: CWCB already voted to put CF in CWP.

Comment [A26]: Merged with #2 above

e. Prepare for Climate Change: Respond to, monitor, and prepare for climate change.

HP	Critical Actions for Climate Change	Section	Partners	When	Type
	~~1. Promote scenario planning and the use of adaptive strategies to monitor, mitigate, prepare for and respond to climate change.~~	~~6.1~~	~~CWCB~~	~~Midterm~~	~~Programmatic~~
	~~2. Work with utilities and federal and state agencies to proactively identify and address regulatory barriers to climate preparedness and adaptation.~~	~~7.2~~	~~CWCB, CDPHE, utilities, federal and other state agencies, stakeholders~~	~~Midterm~~	~~Process~~
*	3. Evaluate and Incorporate appropriate adaptation for the potential effect of climate change on prioritized ~~municipal, industrial, environmental, and agricultural~~ projects and methods that meet state-support factors.	6.5, 6.6	CWCB, IBCC & Providers	~~Midterm~~ Nearterm	Programmatic

	~~4. Work with regulators to modify existing water quality standards to factor in climatic change.~~	~~7.3~~	~~CDPHE~~	~~Midterm~~	~~CDPHE policy~~

VII. Advance Education and Outreach

Advance Education and Outreach: Inform Coloradans about water issues to encourage engagement in determining Colorado's water future.

HP	Critical Actions to Advance Education	Section	Partners	When	Type
	~~1. Create a new outreach, education, and public engagement grant program to fund basin roundtable education action plans and initiatives indicated in the water plan.~~	~~9.5, 9.2~~	~~CWCB, General Assembly~~	~~Nearterm~~	~~Possible legislation~~
	~~2. Conduct a water education assessment to help develop a plan that addresses critical gaps in water education, advances efforts in Colorado's Water Plan, and supports basin roundtable work.~~	~~9.5~~	~~CWCB, BRTs, education partners~~	~~Midterm~~	~~Programmatic~~

Comment [A27]: Expansion suggested above for WSRA eliminates the need for this as a separate action.

Thank you again for your consideration of these comments.

Sincerely,

American Rivers

American Whitewater

Audubon

Conservation Colorado

Environmental Defense Fund

High Country Conservation Advocates

San Juan Citizens' Alliance

Western Resource Advocates

PUBLIC INPUT ITEM 178

September 17, 2015

Colorado Water Conservation Board
1313 Sherman Street, 7th Floor
Denver, CO 80203
Via cowaterplan@state.co.us

RE: Input on Draft 2 Colorado Water Plan

Dear Colorado Water Conservation Board,

National Parks Conservation Association (NPCA) commends the Colorado Water Conservation Board, Governor Hickenlooper, the Interbasin Compact Committee, and the Basin Roundtables (BRTs) for their continued effort to produce a collaborative, statewide water planning process. NPCA provided comments on the first public draft Colorado Water Plan (CWP), and we value the opportunity to provide feedback on the second public draft of the plan as well.

The national parks, monuments, historic sites, rereation areas and other units within America's national park system represent some of the most treasured parts of our country's landscape, and reflect the most significant events in our shared cultural heritage. Because of this, our nation has determined to afford these places the highest levels of protection under the law.

For nearly a century, NPCA has worked to protect the pristine characteristics of national parks to ensure that they will be preserved for current and future generations to enjoy and engage in. A national, citizens' organization with over a million members and supporters, NPCA relies on a bi-partisan constituency of more than one milliion members and supporters, including nearly 30,000 in the state of Colorado, to advocate on behalf of the interests and of America's national park system.

NPCA recognizes that the Colorado Water Plan will put in place an important decision framework that will have implications for parks within the state of Colorado, as well as beyond its boundaries, including 11 park units in the Colorado River basin. Some of the significant management units within the state of Colorado include:

- Bent's Old Fort National Historic Site, La Junta (Arkansas Basin)
- Black Canyon of the Gunnison National Park/Curecanti National Recreation Area (Gunnison Basin)
- Colorado National Monument, Fruita (Colorado Basin)
- Cache La Poudre River Corridor National Heritage Area (South Platte Basin)
- Dinosaur National Monument (Yampa-White-Green Basins)
- Florissant Fossil Beds, Florissant (Arkansas Basin)
- Great Sand Dunes National Park & Preserve (Arkansas Basin)
- Hovenweep National Monument (Southwest Basin)
- Mesa Verde National Park and Yucca House National Monument (Southwest Basin)
- Rocky Mountain National Park (Colorado and South Platte Basins)
- Sand Creek Massacre National Historic Site (Arkansas Basin)

In addition, parks outside of Colorado that lie within the Colorado River basin and stand to be affected by elements of the plan include:

- Arches National Park (Utah)
- Canyonlands National Park (Utah)
- Glen Canyon National Recreation Area and Rainbow Bridge National Monument (Utah)
- Grand Canyon National Park (Arizona)
- Lake Mead National Recreation (Nevada)

NPCA wishes to ensure that the the values our organization aims to preserve in *all* of these parks are adequately considered and prioritized in the CWP.

There are several considerations we surfaced in the first draft of the plan that have been improved upon in this second public draft. Notably, the current draft acknowledges that the economic contributions of environmental and recreational values should be more accurately reflected in the plan, and that the goal of assessing and monitoring the specific seasonal hydrographic needs of recreational and environmental values should be prioritized at a state level. While executing these objectives at the BRT level will be important, the CWP could go farther in asserting the need to understand environmental and recreational contributions to the state's economy statewide.

Considering our mandate of our organization and the sentiments of our national constituency, NCPA feels that several of our concerns from the first draft of the document remain insufficiently addressed in the current draft of the CWP:

- The CWP should clarify the criteria for new storage and updated storage facilities to ensure that they *prioritize* the provision of viable native fish habitat, and provide sufficient seasonal flows for recreation and ecological health alongside consumptive goals. Native species evolved to rely on natural ebbing and flowing, but dams and reservoirs can dramatically inhibit this variability. Section 6.5 should make explicit the goal of prioritizing those projects that can satisfy demand needs with the most minimal impact to stream system health.
- Since the previous draft of the plan was released, the drought affecting the states in the lower Colorado Basin has continued to intensify, with dramatic impact to agricultural economies, cities, and ecological systems. While periodic droughts are a natural part of our climatic conditions in the Southwest, most climate models predict that prolonged droughts in the Colorado Basin will become more frequent as our climate warms in response to human activities. This is likely to result in a warmer river system with less water in it overall, which could compromise Western slope agricultural objectives and environmental goals throughout basin alike. National parks, many of which have not been granted the guaranteed supply of water that would come with federal reserved water rights, are especially vulnerable to these changes and to decisions regarding water availability outside of their boundaries. Transferring water out of the strained Colorado system, while it could help to satisfy consumptive demands in the short term, could have severe, unforeseen consequences in the long term for the overall health of the basin, both in terms of water quantity and quality. Colorado has a responsibility to protect national parks throughout the Colorado River system, as well as the communities and economies that depend on a healthy river system. For this reason, NPCA encourages the CWP to permanently remove the option in of a trans-mountain diversion from the Colorado River basin in the final draft of the plan.

We hope that the final draft of the plan will continue to emphasize the alignment of agricultural and environmental interests by facilitating the opportunity for farmers and ranchers to voluntarily lease excess water on a short-term basis for ecological or recreational purposes. (Critical Action Plan, Chapter 10) The final draft of the plan should more strongly encourage the expanded use of flexible “agricultural transfer methods”, or ATMs, to provide for ecological objectives and other non-consumptive goals. ATMs offer one important tool to keep water rights in the hands of existing agricultural rights holders, while benefitting river systems, national parks, and other recreational and environmental values.

Finally, this draft of the plan represents an improvement over the previous draft in its acknowledgement in the Critical Action Plan that there is a need to identify new funding

opportunities and mechanisms to support conservation, recreation, and environmental goals. NPCA is supportive of this objective and hopes to see this expanded upon in the final draft.

The Colorado Water Plan offers hope that protecting national parks, fish and wildlife, and natural geologic features that dependent on a healthy river system will be compatible with supporting the state's other objectives of maintaining vibrant agricultural and recreational economies, and supporting growing cities.

Sincerely,

(electronic submission)

Vanessa Mazal
Colorado Program Manager
vmazal@npca.org

April 30, 2015

Colorado Water Conservation Board
1313 Sherman Street, 7th Floor
Denver, CO 80203
Via cowaterplan@state.co.us

RE: Feedback on Draft 1 Colorado Water Plan

Dear Colorado Water Conservation Board,

National Parks Conservation Association commends Governor Hickenlooper, the Colorado Water Conservation Board, and members of IBCC and basin roundtables, for undertaking collaborative statewide water planning in Colorado.

This endeavor has implications well beyond the future of one resource. In an arid state such as ours -- where every industry, every community, every treasured place, every stream, every species… either flourishes or withers depending on the availability of water – water planning is more or less equivalent to defining a vision for our society and environment. As recognized by the first draft plan, this effort is made all the more complicated under today's highly dynamic social and environmental conditions. Thus, Colorado's water plan should be underpinned chiefly by the principle of adaptability, even above adherence to convention. The goal should be to lay out a vision that provides a framework for accommodating an uncertain future, and for deeply considering the permanent effects of some decisions and management activities.

NPCA is a national organization, with a field office in Boulder, Colorado that works to protect and enhance the properties and resources within the National Park system under the management of the National Park Service (NPS). This includes following significant management units, in addition to several national historic trails and smaller units, in Colorado:

- Bent's Old Fort National Historic Site, La Junta (Arkansas Basin)
- Black Canyon of the Gunnison National Park/Curecanti National Recreation Area (Gunnison Basin)
- Colorado National Monument, Fruta (Colorado Basin)
- Cache La Poudre River Corridor National Heritage Area (South Platte Basin)

- Dinosaur National Monument (Yampa-White-Green Basins)
- Florissant Fossil Beds, Florissant (Arkansas Basin)
- Great Sand Dunes National Park & Preserve (Arkansas Basin)
- Hovenweep National Monument (Southwest Basin)
- Mesa Verde National Park and Yucca House National Monument (Southwest Basin)
- Rocky Mountain National Park (Colorado and South Platte Basins)
- Sand Creek Massacre National Historic Site (Arkansas Basin)

Considering that NPCA's interests span nearly all of the basins in the state, our comments apply to the structure and content of the statewide water plan, as opposed to specific basin implementations plans (BIPs), although specific BIPs are also referenced.

General Comments

Overall, the water planning process has done a considerable amount to involve many segments of the state's population and to elevate the importance water issues. For instance, it has water planning process has helped to promote a more unified understanding of and commitment to water conservation, across sectors and uses in the state. As the plan aptly notes, conservation measures in municipal, industrial and agricultural uses will play a significant role in to reducing future water supply shortages. NPCA understands that, before finalizing their BIPs, all of the basin roundtables agreed to strive for high conservation measures. We recognize that this was a challenge, as some agricultural interests – especially on the West Slope -- were rightfully concerned about committing to higher levels of conservation themselves in order to support the growing municipal Front Range population, without the East Slope's shared commitment.

Additionally, NPCA fully supports the CWP's inclusion of a "strong environment that includes healthy watersheds, rivers and streams, and wildlife," in its stated values, mirrored in the objectives of all of the BIPs. This value accurately reflects a relatively recent shift in the way that our society thinks about the significance and use of its water resources. In previous eras, environmental values have not been adequately reflected (when at all) in the laws, codes and processes that governed water in the state. As a result, we are now in a position to have to retool our legal and institutional frameworks to better accommodate the environmental qualities that are so important to our state's economies, heritages and identities. The CWP represents an important opportunity in this regard.

Additional comments follow.

Accounting for Environmental and Recreational Interests

In spite of strong support for environmental values and considerable "space" dedicated to it in the individual BIPs, the plan and associated BRTs fall short of fully accounting for recreational and environmental objectives, needs, or contributions.

Notably, most of the BRTs defer the need to quantify or inventory environmental needs within their basins, especially as compared to agricultural needs, and the CWP does not provide a clear mechanism – let alone a commitment – to ensuring that these inventory processes to take place. NPCA concurs with the Bureau of Land Management's suggestion that these inventories be included among the "no and lo regrets" actions recommended in the plan on page 93.[1]

Additionally, no meaningful attempts to account for recreational and environmental contributions to the state's economy are made in the plan, whereas those of other sectors are considered, both in the CWP and in the BIPs.[2] The Outdoor Industry Association (OIA) estimates Colorado's recreational economy to be $13.2 billion per year, which would put it on par with other water-dependent sectors.[3] This bears acknowledgement in the plan.

Also, while Chapter 7 explains the importance of watershed management and touches on the ecosystem services (i.e., contributions to environmental conditions as an end-goal) that our states' watersheds provide, for instance, to fire and flood prevention, the plan does not translate these services into economic terms.

Finally, while considerable attention is given to flexible programs to incentivize alternative agricultural transfer methods (ATMs) to municipal uses, far less attention is paid to agricultural transfers to environmental uses.

These values may seem more abstract and more difficult to quantify than, say, the amount of irrigable acreage or number of municipal users in the state, but NPCA believes that the CWP has a responsibility to place environmental and recreational values on a level playing field with other interests addressed in the plan in order to present a more balanced perspective and more comparable information.

Federal Government Interests and Management Roles

Chapter 2 includes a brief description of federal interests and roles in managing Colorado's water resources. The description, however does not adequately examine the extensive cooperation required between the state federal agencies in managing both land and water resources. While federal land management agencies, including NPS, are indeed responsible for National Environmental Policy Act oversight and compliance, as stated on p. 23, their role in managing Colorado's water resources – and the impact of Colorado's water resources on federally managed resources – is far more extensive than presented.

Additionally, the characterization in the plan in Chapter 2 of federal water rights could be interpreted as implying speculation or intentional undermining of state authorities or interests on the part of the

[1] Colorado Water Plan, Public Input Item 4, Bureau of Land Management letter, Feb 19, 2015, p. 2.
[2] Colorado Water Plan, Chapter 5, p. 71.
[3] See OIA, https://outdoorindustry.org/images/ore_reports/CO-colorado-outdoorrecreationeconomy-oia.pdf

federal government. In fact, it's important to consider that several NPS units were explicitly designated to protect outstanding landscape features that were created by river and lake systems – the plummeting walls of Black Canyon of the Gunnison; Colorado National Monument's turrets; Great Sand Dunes' dunefields and wetlands; and that others are managed to maintain water resources and watershed qualities, notably the Green and Yampa canyons within Dinosaur National Monument.

These federally-managed properties provide important economic benefits to the state, especially local communities, and environmental benefit to the state and beyond. NPS (and other federal agency) management practices directly impact Colorado's river systems and the quality and quantity of water resources, beyond federal property boundaries.

Conversely, the state's management of its water resources directly impacts the health of these NPS units, whether they retain federal reserved water rights or not. For instance, base and peak flows within streams and rivers not only affect aquatic species and riparian vegetation, but also help maintain hydrologic process that have contributed to forming some of these protected landscape features, and distribute sediment and nutrients further downstream.

Recreational and Environmental Supply (Sec. 6.6)

Section 6.6 acknowledges the importance of watershed health, endangered species protection and recreational needs, as well as the relative lack of funding for projects supporting these interests, as compared to agricultural, or municipal and industrial interests. It points to cooperative funding opportunities as the most viable approaches for supporting projects with environmental and recreational goals. (Sec 6.6., p. 213) NPCA completely agrees that every attempt should be made to incentivize projects that genuinely jointly benefit the environment, recreation and other objectives. However, we take issue with the example provided to characterize such opportunities – a new storage project that could be designed to support fishing or boating – as an appropriate one supporting environmental or recreational goals. From the plan:

> "Although there can be impacts to the environment and recreational interests from municipal or agricultural projects, these uses can also provide benefits. A reservoir provides wildlife and fish habitat, and recreational opportunities for visitors, and provides a mechanism for the beneficial management of stream flows." (Sec 6.6, p. 213)

This section suggests that proponents of new storage or water development projects essentially couch their projects in terms of recreational interests in order to gain more support (and less conflict), rather than addressing the need to identify viable projects whose *primary* goals are to support watershed health or environmental values. "Greenwashing" of such projects is a common strategy for downplaying environmental impacts in order to advance other interests. In fact, reservoirs often harbor non-native

aquatic and riparian species that compete with native ones, and disrupt the life cycles of native species[4]; interrupt natural variations in the hydrograph, or flow regimes, that our state's ecosystems have adapted to depend on; prevent the distribution of sediment and nutrients throughout the river system; and alter water temperatures and water quality. Indeed, stream flow regulation can help to mitigate some of these negative effects *to a degree* once a reservoir is in place, but there are very few circumstances in which building one in the first place is preferable for environmental goals.

On its own, this example is only a minor concern, but it points to a fundamental issue in how environmental projects are treated throughout the BIPs, in the 2010 SWSI IPPs, and in the CWP, namely, that they are neither inherently valuable, nor fundable. The promotion of projects whose primary goal is storage or development, with distant secondary advantages to recreational or environmental interests, gives short shrift to environmental and recreational objectives and their benefits to the state. Furthermore, it discourages the identification of sources of support for practical projects improve our state's river systems. NPCA suggests that the plan would be better served by challenging conventional perceptions of "multi-use" projects by highlighting ones that have more direct environmental benefits, and examining creative solutions for supporting them.

Future Trans-mountain Diversions (TMDs) and IBCC "Points of Light"

The IBCC has introduced seven principles for consideration in its 'framework' for in future trans-mountain diversion (TMD).

Even though Colorado is legally one state, with a statewide water supply limits, and with statewide compact commitments to meet, this planning process, and the IBCC's recommendations in particular, have underscored the long-standing division between east and west slope priorities, needs, and goals. Within the draft BIPs, and during the recent 2015 statewide meeting of basin roundtables, western slope representatives have continually voiced concerns about shifting water away from their basins in order to meet the future needs of a growing Front Range population. In particular, they cite their strong desire to maintain – and grow -- the agricultural economies, landscapes and cultural heritages that remain central to western slope life.[5] As the plan notes, presently 450-600 acre-feet of water is diverted to the east slope from the Colorado River and its tributaries.

[4] This subject is well documented in research by the Upper Colorado Endangered Fish Recovery Program, as well as other Colorado River research programs, such as the Glen Canyon Management Research Center. Indeed, the creation of these programs stems from conflict stemming from the impacts of existing and proposed development projects with endangered fish species and other environmental conditions. See, e.g., Breton, A. R., et al. 2013. *Escapement rates of translocated smallmouth bass (Micropterus dolomieu) from Elkhead Reservoir to the Yampa River*. Final report to the UCEFRP, Denver, Colorado. Larval Fish Laboratory Contribution 168; *Swimming Upstream*, Upper Colorado River Endangered Fish Recovery Program and San Juan Basin Recovery Program report, Winter 2013.

[5] A side note: the "straw poll" conducted at the statewide BRT meeting in March 2015, which resulted in widely publicized supposed support for a TMD, reflected considerable bias. Many participants – myself included – were not willing to be put on the spot by demonstrating their opposition to the IBCC "points of light" in such a public forum. This type of activity is a waste of

Securing the viability of West Slope agriculture is an important goal, and one that should be prioritized, but there are other, strong arguments for keeping remaining West Slope water – all of which ultimately drains into the main stem of the Colorado River – from being diverted out of the Colorado Basin. To this end, the IBCC framework has fundamental flaws:

a. **Lack of consideration of the value of "peak flows"** - Future diversions would be "triggered" by certain conditions, one of them being "wet year" conditions, understood to be those years above specific threshold levels in Lake Powell. The framework fails to recognize that "wet years" not only satisfy consumptive and non-consumptive allocated water rights, but they also result in spring "peak flows", or floods, that are a natural part of the Colorado Basin's hydrograph.[6] Historically, Colorado River flooding is responsible for carrying nutrients (mainly from alpine forest decomposition) downstream and depositing them the basin's fertile valleys; for carrying sediment loads, bulky minerals (such as the rocks that were responsible for forming Black Canyon of the Gunnison, according to the rationale for its water right[7]); maintaining native fish populations; and maintaining native riparian vegetation, such as cottonwood and willow. [8]

b. **Colorado Basin is a highly strained system** – Thanks to existing infrastructure and diversions, and persistent, recurrent drought, the Colorado River Basin is already in dire straits: both Lake Powell and Lake Mead are at historic low levels; native fish populations and vegetation have been ravaged; water quality and temperatures have been significantly altered. Considering these conditions and continued climate change produces even more uncertainty, any additional diversion of water away from the Colorado and its tributaries produces further risk to the system. There are 11 national park units in the Colorado River system which include Dinosaur National Monument, Black Canyon of the Gunnison National Park and Curecanti National Recreation Area, Arches and Canyonlands national parks, Mesa Verde National Park, and the Grand Canyon, among others. These protected places – as well as many other treasured landscapes in the fragile, arid Colorado Plateau -- rely on adequate water and a functioning, dynamic river system, and would be directly impaired by an additional future TMD.

c. **ROI** – Even if we put aside the issue of the importance of recognizing peak flows in the Colorado Basin, and the health of a fragile watershed overall, there's a strong possibility that the benefits of a future TMD would not outweigh the costs, considering that the Colorado River has experienced a decade-long drought and that scientific analysis indicates that such periods are relatively normal, the risk that that water storage levels could not support TMDs regularly enough to make worth the investment, is high. A study project would cost millions – millions that could be otherwise used toward more productive purposes, such as stream restoration; infrastructure repair; or the acquisition of in-stream flows, ATMs, or leases.

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valuable time and has the potential to diminish CWCB's credibility and neutrality. If CWCB intends to gage state support for IBCC's framework, it should consider a more appropriate and accurate, anonymous survey method.

[6] See, e.g., O'Connor, J.E., et al., "A 4500-year record of large floods in the Colorado River in Grand Canyon, AZ," Journal of Geology, V. 102, p. 1-9, 1994; Greenbaum, Noam et al. (2014) "A 2000 year natural record of magnitudes and frequencies for the largest Upper Colorado River Floods near Moab, UT," Water Resources Journal, June 2014.

[7] http://www.nature.nps.gov/water/Homepage/Black_canyon.cfm

[8] Scott, ML, Auble, GT, and Friedman, "Flood Dependency of Cottonwood Establishment Along the Missouri River,' Ecological *Applications*, 7(2), 1997, pp. 677–690.

d. **Transparency** – Many BRTs have expressed fear that water developers with Front Range economic interests in mind could apply for water rights several years before a proposal is formalized, and partially pave the path to a TMD approval under the radar of a fully transparent, public process. The IBCC framework fails to account for this administrative blind spot.

Leaving the possibility open for a future TMD from the Colorado Basin in this iteration of the state's water plan reinforces a rift that has divided the state for decades. It undermines the plan's stated commitment to supporting healthy watersheds and other environmental objectives, and providing for the security of the West Slope's agricultural economy and heritage. **Considering the above factors, NPCA supports closing the door on a future TMD in this iteration of the plan instead of passing this difficult decision on to future panning processes.**

NPCA welcomes the opportunity to discuss these concerns and will play an active role in engaging in future aspects of Colorado's water planning process.

Sincerely,

(electronic submission)

Vanessa Mazal
Colorado Program Manager
vmazal@npca.org

PUBLIC INPUT ITEM 179

BERG HILL GREENLEAF RUSCITTI LLP

Peter D. Nichols
Partner

Email: pdn@bhgrlaw.com

17 September 2015

Via email to cowaterplan@state.c+o.us

James Eklund, Director
Colorado Water Conservation Board
1313 Sherman Street, Room 721
Denver, Colorado 80203

RE: Comments on Second Draft, Colorado Water Plan

Dear James:

The Second Draft of the Colorado Water Plan establishes a strong basis for bold, innovative action to meet the State's future water demands.

Many relatively small and geographically diverse M&I demands comprise the "gap."

Small municipal and special district water providers along the I-25 corridor likely represent the overwhelming majority of M&I needs to 2050. For example, as of this March, the top 15 housing projects in the 7-county Denver Metro area contain 85,450 lots. *See*," New wave of development poised to roll across Denver's suburban fringe," The Denver Post (03/08/2015), available at http://www.denverpost.com/news/ci_27668845/new-wave-development-poised-roll-across-denvers-suburban. Most of these developments do not appear to lie within the service areas of major water providers, and represent around 40,000 acre-feet of annual demand. Another example is a July RFP for 3,000 to 5,000 acre-feet of irrigation water by the Town of Firestone, City of Dacono, Central Weld County Water District and Little Thompson Water District.

Buy-and-dry continues to be default local strategy to meet future needs.

The above examples underscore two current realities. First, geographic diversity and small demands comprise future M&I demands along the Front Range. Second, irrigation water rights are the default source of supply because of a lack of alternatives. In fact, SWSI predicts the South Platte River Basin could lose over 30% of today's irrigated land, and the Arkansas

River Basin almost 50% of its historically irrigated land by 2050. The Colorado Water Plan should address these challenges with specific programs because the demands exist now.

Meeting the M&I demands of many small, geographically diverse providers necessitates fundamentally altering "business as usual." But local resources – in-house and outside expertise as well as financial capacity – are inadequate to meet demands in any other manner. Regional solutions like Windy Gap Firming, NISP, and the Lower Arkansas Valley Super Ditch offer the greatest promise for small providers to meet future demands without buy-and-dry.

The Colorado Water Plan should incentivize regional solutions.

Coordinated reservoir operations have shown that the yield of multiple elements of infrastructure can be larger than the sum of the parts. That's a relatively simple goal to achieve on the Colorado River since the Secretary of Interior is in charge of the entire system. Colorado, in contrast, is composed of many separate, independent systems developed over 150 years by different water providers. There are, however, some notable examples of entities that serve many members, like Northern Water's Subdistrict, Southeastern's Fry-Ark Project, the Homestake Project, and the recent WISE Project. Undoubtedly many other opportunities exist, but there's little incentive for the "haves" to help the "have nots" now, except perhaps to avoid a messy crisis on their doorstep.

The State should turn Colorado's historical parochialism into an opportunity to make additional water available by identifying and funding projects to integrate existing trans-mountain and Front Range water systems. State financing should incentivize/subsidize larger providers to regionalize their service areas using existing and new infrastructure to serve smaller nearby providers through contract water services (which could be a prelude to eventual consolidation, which the State should also incentivize). Some providers, for example, may be induced to take that step with State funding that would not only cover their costs, but reward them (and their customers) for their past foresight and action.

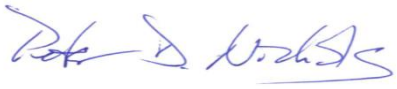
The Colorado Water Plan should initiate a state water project(s) to maximize the beneficial use of the State's limited water resources.

In the last couple of decades, there have been several years when one basin or another was literally buried in more snow (or flooded with more water) than they could use, or that Colorado owed to downstream states. Climate change models predict more of these precipitation anomalies in the future. Allowing these bountiful natural gifts to flow out-of-state while other basins suffer in drought (or have storage available) is an unconscionable waste of Colorado's precious water resources. Colorado's most used rivers – the Arkansas, Colorado, and South Platte – arise in close proximity (roughly from Fremont Pass west to Tennessee Pass south to Independence Pass). The Arkansas, Gunnison, and Rio Grande basins are similarly divided by

single ridges. This geography, of course, facilitated the many trans-basin diversions constructed by water users to meet their needs. Unfortunately, when their needs are fully satisfied and their storage filled, the bounty of these exceptional precipitation events flows across statelines. Although Colorado has never had a "state water project," this opportunity cries out for State leadership to investigate, design, construct and operate the necessary infrastructure to share these surplus resources among the basins. The State alone is in a position to manage these flows to mitigate devastating drought and floods for the benefit of the entire State.

Thank you for your consideration.

Sincerely,



Peter D. Nichols

tmg

PUBLIC INPUT ITEM 180

Comments of Be the Change on the 2nd Draft of the State Water Plan

Like with the first draft, the greatest shortcoming in the second draft of the State Water Plan is the authors' inability or unwillingness to deal with climate change and its inevitable impact on our water supply, and how and by whom that water supply should be used and shared under the rigorous limitations climate change will impose upon all of us, the natural environment included.

Without this analysis forming the basis of any "futures" discussion, the document is basically worthless, a cruel joke or cheap trick on the public who just happens to be paying for it, and who will also pay for any solutions proposed. Surely, the public has the right to expect something useful and honest concerning climate change and its impacts on our water future.

In this regard sensitivity analysis must be central to any water-future and alternative discussions. The authors should, of course, use the best science available on this subject.

The IPCC's Fifth assessment, or EPA's report of this July would be good starting points. We are fortunate to have the National Renewable Energy Laboratory's, NREL, headquarters in Golden. It, along with EPA Region 8, NOAA, and climate scientists at the state's major universities, should be consulted on this subject and invited by the legislature to testify on the matter.

Lest their be any doubt about the reality of anthropomorphic climate warming, know that the latest survey by Dr James Lowell Powell, Executive Director of the National Physical Science Consortium, shows that over 99.9 percent of the scientists who have written peer reviewed articles on the subject the past two years agree that humans are causing climate change. Here is Powell's sobering conclusion in his own words:

> The only sound and practical way to judge the extent of a scientific consensus is to search for articles that reject the prevailing theory. For 2013 and 2014, I found that only 5 of 24,210 articles and 4 of 69,406 authors rejected anthropogenic global warming, showing that the consensus on AGW is above 99.9% and likely verges on unanimity.

What is in some doubt is the degree of climate warming, for that change is largely dependent on our actions to control climate-warming gasses such as CO2, methane, and nitrous oxide, gasses associated with our burning of fossil fuels. (Our past unwillingness to control these gasses has set in motion climatic physical forces that some worry may be beyond our ability to control, that we are beyond the tipping point.) There are of course other natural sources for these gasses, as climate deniers will be quick to point out, but the emphasis has to be on what we water consumers are doing to the earth, and by extension our water supply.

The Water Plan must address the scientific formulations and data available and be resilient to change and modification of plans based on the evolving science of climate. For instance, the IPCC in each of its five climate warming assessments published since its inception in 1988 has raised, with each assessment, its estimate of our impact on the earth's climate because of the exploration, production, and use of fossil fuels. The IPCC is, in our opinion, inordinately conservative or cautious, and may have unintentionally allowed the fossil fuel industry and politicians in their pay to deny the obvious. This is why the state must be flexible and resilient to more bad news on climate. Denial is no longer an option for sentient beings.

We do not intend to propose the range of temperature increases and precipitation decreases that must form the margins of your analysis and how sensitive our water future is to these changes in temperature and precipitation. But here are just a few "for instances" that leap out of the page for us.

a. The U.S. Bureau of Reclamation estimated in 2012 that the annual flow the Colorado River might decrease by 9 percent in the next 50 years, even if normal snow-fall continues. The USGS estimated the Colorado River might experience between a 5 and 20 percent annual decrease in flows by 2050. It also disclosed that one model showed a decrease of as much as 45 percent. Given these wide ranging estimates when do plans for more transmountain diversions become physically or environmentally impossible? When do the costs per acre-foot delivered start to become economically prohibitive. At what point does environmental mitigation become impossible? In other words, at what point would increased diversions destroy the headwaters aquatic environment?

Similarly in evaluating existing projects, at what point would present transmountain diversions from the federal Frying Pan-Arkansas and the Colorado Big Thompson projects have to be cut back, and by how much? Similarly, when would Denver Water's diversions from Dillon Reservoir have to be curtailed?

And finally, when would the rights of the lower basin states under the Colorado River Compact impinge upon these diversions and any planned future diversions.

b. The U.S. governmental climate research program, made up of 13 federal agencies, including the Departments of Defense, State, Interior, Agriculture, Energy, Commerce, and the EPA, because of climate warming from fossil fuel green house gasses, projects a temperature increase for Colorado of "between 3.5°F and 6.5°F by 2050 and much more later in the century. Typical summer temperatures by 2050 are projected to be similar to the hottest summers that have occurred in the past 100 years."

The report also predicts moisture in the snowpack to decrease by 13 percent by 2070, a 25 percent loss by 2100. This might be good for the powder skiers, but no one else. Runoff will be earlier and faster, and there will be less soil moisture because higher temperatures will condition higher evaporation and evapotranspiration losses. Additionally, these federal agencies predict an annual mean precipitation

decrease of between 3 and 8 percent for the state's population centers along the Front Range. These predictions add up to a very different future, one that state plan does not adequately address, and in fact, too often simply ignores.

Admittedly, the rate at which the climate may be changing makes predictions on water supply extremely difficult. And that is why sensitivity of any plan to those climate change ranges or inputs must be central to any state water plan analysis.

Given the forgoing, water conservation must become the linchpin of any state water plan. Moreover, the continued focus of the "stakeholders" in the development of the plan are weighted too heavily toward the protection and enhancement, even, of traditional users such as irrigated agriculture and ranching.

The state's water plan is based on a projected doubling of the state's population to over 10 million people by 2050. It predicts a corresponding need in a new water supply of 163 billion gallons, or roughly 500,000 acre-feet of water. Each basin has come up with its own estimates and solutions. Often this includes increased supplies for farming and ranching. In our opinion this is all backward looking and completely ignores the realities of climate change.

These are few facts to consider. In Colorado, agriculture uses roughly 85 percent of all water. Statewide we use approximately 15,000,000 acre-feet annually. Thus, agriculture might be said to use about 128 million acre-feet of the total, in very simple terms. A ten percent increase in efficiency in agricultural water use would result in 1,280,000 af becoming available for economic growth. This is over twice the projected needs of the state from a doubling of the population by 2050, if, indeed, that can be believed.

Consider too, that ,

a. agriculture contributes about 2 percent of the state's economy.

b. most of that economic production comes from federal farm subsidies. Sometime back, during the Owens administration, the state's office of economic development published a report that said without the subsidy program agriculture, with the exception of livestock, would have little to no positive impact on the state's economy.

c. the federal farm subsidy program is paid by taxpayers. In a double whammy, the taxpayers also pay the lion's share of the costs of federal and state water projects. The federal projects only require the ag users to pay up to their ability, which is usually next to nothing and is paid over time without interest on the debt. Any further efforts to divert more scarce public water to agriculture under these circumstances is simply indefensible, if not idiotic.

c. small farmers, who we might reasonably expect to become the backbone of production for table crops in our predicted climate future, receive no farm subsidies to

speak of. Farm subsidies are captured almost exclusively by large farm operators and agribusiness. According to Department of Agriculture records, 69 percent of the farmers in the state received no farm subsidies. About 10 percent of all farms received 69 percent of the subsidies. Thus roughly 3000 farmers received the lion's share of the subsidy. Nationwide, "the majority of subsidies go to commercial farms with average incomes of $200,000 and net worth of nearly $2 million," according to a 2007 article by the conservative Heritage Foundation.

d. In Colorado, the taxpayers lavished out about $54 billion dollars to these few farmers between 1995 and 2012, the last year of record. This comes to about $360 million a year. In fact, several years back an Environmental Working Group, EWG, analysis showed that in many case the subsidies paid out to landowners exceeded the value of the land itself.

e. subsidized corn is one of the chief farm crops in the state. Much of the corn is turned into ethanol, about 40 percent nationwide. Professor David Pimentel of Cornell and others have questioned if there is really any net energy gain in converting corn to ethanol. His position is controversial, and heavily contested by big oil and agribusiness.

f. from a health perspective, a high correlation exists between the use of the corn pesticide, atrazine, and Parkinson's disease, though direct causality is not proven.

f. finally two of the biggest supporters of the state water plan receive substantial farm subsidies. The honorary chairman of the plan, John Stulp and his wife Jane have received roughly $3 million in farm subsidies. Their children have received another $1.7 million in subsidies. State senator Jerry Sonenberg has received about $628 thousand in farm subsidies. Others in the Sonnenberg clan have received substantially more.

In summary, if we are serious about water efficiency and dealing with climate change, we must look first to those who use the most and often raise crops we don't need for solutions that protect the common good.

Power from fossil fuels also uses much water. It is the second largest user in the state. Some analysis should be conducted of what water saving could be realized by converting with real speed toward renewables and away from coal and natural gas steam generation? This is not to excuse domestic water use from any conservation plan. Great savings are possible. California reduced its water consumption by 35 percent in July. But it did so because it was mandated. The fact that all water conservation in the state water plan is voluntary is another of it many weaknesses. Real thresholds must be developed and upheld.

Water use by the oil industry and fracking receive hardly a passing nod in the state water plan. Yet, the industry is reportedly using 18,000 af of fresh water annually. That is enough water for the domestic needs of 180,000 people. Indeed, over ten years of continued steady demand, a third of the projected water needs in 2050 would be

squandered on fracking. This is water that is taken out of the hydrologic cycle, never to be used again.

Add to this that industry was allowed to dump over 16 billions gallons (49,000 af) of liquid toxic waste from its fracking operations into our groundwater in 2013, with some of groundwater potable or formerly so. If constant, the cessation of this practice and the mandated clean up of this waste over a ten year period would practically meet the projected new water demand in 2050. But more importantly what costs are we transferring to future generations by allowing this pollution subsidy to the industry? This is another shameful subsidy borne by this and future publics.

Chapter two of the plan needs to be thoroughly revamped. The history told is a lie. The waters of this state are owned by the people. Ownership was heavily debated during Colorado's constitutional convention. The decision was to make water public property, owned by the people, not the state, and certainly not individual users. The constitutional framers hoped to preclude monopoly ownership and speculative use. To be sure **WATER USERS HAVE A STRONG USE CLAIM AS PROPERTY. BUT THEY DO NOT OWN THE WATER. IT IS THE PROPERTY OF THE PEOPLE**. The people have been very generous in giving away and granting use of its most valuable resource to basically all comers under the concept of putting it to beneficial use. It is past time that we developed a stronger legal definition of what constitutes beneficial use. Clearly, private enrichment may not be beneficial to the public that owns the water. The irrigation of surplus crops and the use of public water for fracking come immediately to mind. The legislature should take up this serious subject in the name of the true owners, the people.

Phil Doe and Wes Wilson for
Be the Change

PUBLIC INPUT ITEM 181

Colorado Ag Water Alliance

"Commited to the preservation of agriculture through the wise use of Colorado's water resources"

September 17, 2015

Mr. James Eklund
Executive Director
Colorado Water Conservation Board
1313 Sherman St., Room 718
Denver, CO 80203

Dear Director Eklund,

The Colorado Agricultural Water Alliance (CAWA) wants to thank you, your staff and the Board for the work that has gone into preparing the final draft of the Colorado Water Plan. We recognize that much of the plan is dedicated to meeting Colorado's future water needs while sustaining a vibrant agricultural economy in our state. CAWA strongly endorses a coordinated approach to protecting agriculture in all basins across Colorado, as farmers, ranchers and agribusiness are a critical component of Colorado's future. We respectfully offer the following comments on the draft Colorado Water Plan from CAWA members, representing all aspects of Colorado agriculture. More information about CAWA and the member organization can be found at www.coagwater.org.

The following comments are offered in a bulleted and concise format in order to clearly communicate the perspectives and observations of the agriculture producers and organizations that comprise CAWA:

- The majority of water diverted in Colorado is used to grow our food. Without planned interventions, the path we are on is drying up vast areas of irrigated lands. Colorado's farmers and ranchers contribute $41 billion to the state economy and employ nearly 173,000 people, providing local food and energy, as well as over $1 billion annually in international exports sustaining Colorado's economy. In addition, the value of Colorado's diverse agriculture is much more than purely economic, it's also about communities and the "public good" associated with aspects of a vibrant agricultural sector. Private working lands provide the majority of wildlife habitat and open spaces that offset some of the unwanted aspects of urban growth such as sprawl, traffic congestion, noise, habitat loss and air pollution. The stewards of the land on more than 37,000 farms and ranches care for 31.6 million acres, almost half of Colorado's land area. As we lose irrigated agriculture, we are losing our heritage, our rural communities, and we are losing water that travels through our rivers to downstream farms, providing recreational flows as well as environmental amenities such as wetlands and aquatic habitat."

- Tremendous amounts of both land and water have already been removed from productive agricultural uses in Colorado through buy and dry, well restrictions, municipal development, and other changes. Agricultural productivity has kept pace with demand for the time being through increased water-use efficiency and by maximizing "most crop per drop" management practices. However, continued reduction in water available for agricultural uses can only lead to intensified challenges as population growth rate and the resulting competition for water increase beyond Agriculture's ability to adapt.

- CWP is overly focused on Alternative Ag Transfer Methods, which in fact will also result in reduced irrigated acres. While we support this work, it is only a fraction of what needs to be accomplished to implement the goals of the Water Plan. We propose a statutory revamping of CWCB's current ATM program to include the ATM program as well as other methods and innovations to keep, develop and conserve Ag water.

    - Fallowing options should be considered only as a last resort. Use other ATM's as a higher priority driven by funding. In the interest of all consumers, it will be important to analyze which are least impactful to irrigated agriculture through decreased production and dry-up.
    - It will be important to develop a decision tool to help prioritize and determine which ATM's are used and for what purpose.
    - We suggest consideration of a cap on the number of ATM's per basin.

- Communities routinely offer financial incentives to new commercial and industrial development, thereby increasing the demand for more M&I water. CAWA supports establishing a long term funding mechanism committed to steady and significant funding in order to facilitate:
    - Conservation easements around irrigation water
    - Developing ways to incentivize water staying in Ag in addition to developing alternative methods for urban transfer.
    - Upgrading irrigation and diversion systems
    - Purchasing water rights specifically to create a pool for leasing to agriculture
    - Providing adequate staff resources to manage and coordinate the Ag Water Program.
    - Developing strategies to remove or minimize the numerous disincentives that are causing the loss of farms and ranches in Colorado.

- CAWA endorses outreach and education plans but believes a proportional focus on these efforts be associated with agriculture irrigation water to look inward related to producer education and outward to the public at-large.

- Of the highest priority, CAWA calls upon state leadership to prioritize state support for new multi-use storage projects (new surface reservoirs, refurbished existing storage, and aquifer storage) that include dedicated agricultural water

storage. CAWA endorses the investigation of regional partnerships to look at all possible sources of water from out of state to meet the gap and recommends that the CWP call for continued investigation of interstate water augmentation opportunities.

- CAWA believes streamlining of federal and state permitting processes for new and renovated infrastructure projects. Additionally, CAWA calls on the state to work with the Western Governors, Colorado Water Congress, and Colorado Ag Water Alliance member organizations that are dedicated to the reduction of unnecessary federal, state and local permitting roadblocks.

- CAWA believes more focus should be placed on importance of groundwater for agriculture in the CWP. Groundwater depletions in certain aquifers and restrictions in others will significantly increase the agricultural water gap and vulnerabilities for Ag production in the near future, particularly as drought and high temperature events occur.

- The CWP should better document the importance of innovation and technology in future agricultural water management. The draft CWP essentially projects "business as usual" in terms of technology and innovation, which is not at all the expected pathway in US agriculture. However, Colorado agriculture will need to be on the front wave of technology adoption to remain competitive and we recommend additional State focus and investment in agriculture through a dedicated agricultural innovation fund.

- While conservation is a responsible water use practice in municipal and industrial use and may help reduce pressures on agricultural water, it should be emphasized more clearly that urban water conservation in some situations can reduce delivery to downstream water users and cause negative agricultural, municipal and environmental impacts. Additionally, it should be pointed out that the Ag Gap will continue to widen as trans-mountain water rights holders increase their urban conservation and reuse programs that diminish return flows.

    - CAWA supports looking at a stronger municipal conservation strategy for Colorado to include stronger criteria for new developments, household-by-household prescriptive conservation measures, etc.
    - CAWA supports in-field (actually in the irrigated crop field) efficiencies for water delivery and administration but sees little if any ability for conservation. This observation is based on Colorado Water Law and the engineering practicality of how water moves. In other words, Agriculture's conserved water is not conserved but becomes another water right holder's consumptive water. When an Agricultural water right holder diverts less due to conservation, one or more downstream water right holders are most likely injured or affected.
    - To actually conserve water…water has to be not utilized. Agriculture has aggressively engaged in conserving/using less "process" water throughout

our value chain to include washing, conveyance, dust control, evaporation, leaks, etc. These facts are well documented and listed at the end of these comments.

-
- CAWA ardently opposes any mandatory limitations/conservation of agriculture irrigation water.
- CAWA supports efficiencies focused on infrastructure improvement, cropping strategies, engineering of water application. CAWA also believes other industries should evaluate their efficiency mechanisms in conjunction with their supply chains. CAWA also supports evaluating and implementing criteria whereby efficiencies can cause harm to other water users.

- CAWA has concern with the municipal conservation "stretch" goal. This goal to conserve 400,000 acre feet of water by 2050. While admirable, it stirs concerns with our organization. This goal could be used as a condition to be met before implementing other solutions to meeting Colorado's future water needs. This could be a dangerous situation for Colorado, stalling needed progress without knowing if the goal is even achievable.

- As mentioned above that responsible conservation could help reduce pressure on agricultural water, this "stretch goal" is a very high level of conservation that could result in a significant reduction of water delivery to downstream agricultural users, contributing to the widening of the Ag Gap. CAWA also believes that this skews the balance of the CWP towards conservation and to compensate for that, more emphasis is needed on increasing supply through refurbishment and expansion of existing reservoirs, construction of new multi-purpose storage, and importation of non-Colorado water supplies.

- Agriculture water, through use and reuse, provides for exponential benefits to the entire ecosystem beyond abundant and safe food production. Removing or reducing agriculture water use will potentially impact stream flows, affecting downstream water availability and thereby restrict wildlife habitats and wetlands, reduce nutrient cleansing, and reduce critical food and energy production, as well as recreational benefits.

- CAWA recommends that the CWP include a call to investigate implementation of an **"Ag Impact Assessment Statement"** as a requirement in large change cases involving agricultural dry-up (for example; transfers of 500 AF or more). This process will provide transparency for local communities as they assess the impact of large agricultural transfers and attempt to mitigate losses to the local economy. CAWA will participate in the development of appropriate process criteria.

- Related to "Municipal reuse" we recommend that language be inserted in this section that although "reuse" sounds like a viable answer to reduce the overall diversions from a river there are often times legal restrictions that prevent "reuse"

of some water and even if the water can legally be used to extinction there are often unintended consequences. As an example, as the Denver metropolitan cities begin to reuse more of their trans-mountain waters the net result is less water for downstream agriculture so some people believe that the estimated shortages for agriculture downstream of Denver may be underestimated because of this. (Note; CAWA Comment 9 also makes this point but specifically for section 6.3.4 as we feel it is important to include this information in both places.)

- The system today, of Water Court and administrative procedures can and should be cost effective related to the desired outcome not cost prohibitive as a strategy for some to outspend/outlast their opponent in order to secure their way to a win. CAWA request a strategic review and modification of these systems to curtail this strategy.

- CAWA supports changing federal tax code that currently removes the not for profit status of a mutual ditch company when outside income for the mutual ditch company exceeds 15% of their total income. Many mutual ditch companies are struggling to find alternative sources of income to help fund the replacement of aging infrastructures and to improve the efficiencies of water delivery but if outside income exceeds the 15% threshold suddenly they are burdened with paying federal taxes on all of their income.

- A compendium of research and observational science exists that indicates properly managed forest will yield greater water availability with a higher quality level. The CWP lacks in a prospective approach to forest health that addresses this issue before it becomes worse. CAWA calls upon the plan to engage with the Forest Service in a meaningful strategy to implement a forest management plan that includes tree harvest/control, soil health and dead timber mitigation as a high priority for implementation.

- CAWA has strong concerns over the level of detail and strategic consideration that Chapter 10, the Critical Action Plan. CAWA suggest that this chapter be contextually reviewed for its lack of interpretative clarity. While an important subject area, we do not see this chapter being of the caliber that other chapters are. One could ascertain from the chapter that irrigated agriculture needs greater funding and a curtailment of ag tranfers are a high priority. On the other hand, you could also interpret that resources should be allocated to moving water the highest and best uses to meet future demands in light of a changing climate equating into ag dry up.

  Due to the lack of priorities, timelines and mechanisms for completion, CAWA recommends that this section remain draft and become part of the dialogue around the CWP's implementation strategy rather than an element of the finalized plan.

Thank you for this opportunity to comment on the draft Colorado Water Plan. We invite you and your staff to meet with CAWA to discuss these comments and recommendations.

Sincerely,

Charlie Bartlett, CAWA President
970-522-9302
cbartlet@kci.net

Appendices
CAWA requests that the following documents be entered into the record as official supporting materials related to above comments. Due to document length, the following links have been provided.

Agriculture Water Conservation Brochure
http://coagwater.colostate.edu/docs/brochure.pdf

Meeting Agriculture's Future Water Supply Needs
http://coagwater.colostate.edu/docs/Meeting_CO_Future_Water_Supply_Needs_September_2008.pdf

Colorado Ag Water Alliance Principles
http://coagwater.colostate.edu/docs/CAWA%20Water%20Principles_revised%201-29-13.pdf

Does Beef Really Use That Much Water
http://www.beefresearch.org/cmdocs/beefresearch/sustainability_factsheet_topicbriefs/fact%20sheet%202-water.pdf

Beef Life Cycle Assessment (Accounts for other commodity water savings also)
http://issuu.com/beefcheckoff/docs/sustainabilityexecutivesummaryweb?e=8298940/6720608

Economic Impact Analysis of Reduced Irrigated Acreage in Four River Basins in Colorado
http://www.cwi.colostate.edu/old/pubs/series/completionreport/Completion%20Report%20207.pdf

PUBLIC INPUT ITEM 182

SUMMIT COUNTY
COLORADO

BOARD OF COUNTY COMMISSIONERS

970.453.3402 ph | 970.453.3535 f 208 East Lincoln Ave. | PO Box 68
www.SummitCountyCO.gov Breckenridge, CO 80424

September 17, 2015

VIA EMAIL: COwaterplan@state.co.us
Governor John Hickenlooper
Colorado Water Conservation Board
Diane Hoppe, Chair

Re: Summit County Board of County Commissioners Comments on July 2015 Draft of the Colorado Water Plan

Dear Governor Hickenlooper, CWCB Chair Hoppe, and CWCB Board Members:

The following comments on the July, 2015 draft of Colorado's Water Plan (the "Plan") are respectfully submitted by the Board of County Commissioners of the County of Summit ("Summit County.")

Summit County acknowledges the tremendous effort that has gone into the preparation of the Plan and the hard work of the CWCB staff and Board, the Roundtables, the IBCC, and many water providers, governmental and non-profit organizations, and other interested parties, many of whom volunteered their time. The draft Plan provides a solid foundation for the future studies and discussions that will be necessary to provide a secure water future for Colorado.

Summit County Government provides water to public and private consumers and users in the County for a wide range of uses, including water for affordable housing; replacement water pursuant to the County augmentation plan; wetland habitat maintenance and stream restoration; mined land reclamation; fire protection; snowmaking; and uses at County facilities. Summit County has a long tradition of appropriating and acquiring water resources to meet the current and future needs of its citizens and participating in collaborative planning and project development. See, e.g. the Agreement between Summit County Board of Commissioners and Denver Water, dated September 19, 1985; the Clinton Reservoir - Fraser River Water Agreement, dated July 21, 1992; the Upper Colorado River Basin Study, Phase II Final Report ("UPCO") dated May 29, 2003; the Agreement Establishing the Old Dillon Reservoir Water Authority dated May 12, 2010; and the Colorado Cooperative Agreement ("CRCA") dated September 26, 2013.

The Colorado State Demographer estimated Summit County population in 2015 at 29,355 people and forecasts population to increase to 48,917 by 2040. The Statewide Water Supply Imitative concluded that Summit County's water supply demands will increase from approximately 8,000 AFY in 2008 to 16,800 AFY by the year 2050. According to the 2003 UPCO Report, approximately 25% of the future demands will be in the upper Blue River area above Dillon Reservoir. The Colorado Basin Implementation Plan identified numerous stream reaches in the County where environmental and recreational features are at risk, including in the Blue River below the transmountain diversion facilities of Denver Water and Colorado Springs.

Summit County is a major donor basin, providing an average of over 80,000 AFY through Dillon Reservoir, Straight Creek Tunnel, Vidler Tunnel and the Continental Hoosier Tunnel. Total transbasin diversions from the Blue River basin will increase substantially with full use of Denver Water's Roberts Tunnel and Dillon Reservoir system and completion of its Moffat Firming Project. Streamflows in the Blue River below Dillon Reservoir under additional anticipated diversions through the Roberts Tunnel will often be at or just above the decreed minimum stream flows of 50 c.f.s., and well below flows needed for recreation purposes and fish habitat during normal water years. In very dry years, flows below Dillon Reservoir have fallen below 50 c.f.s. and may continue to decrease below the ISF target if Denver Water reduces outflows in accordance with the 1966 right-of-way from the Department of Interior, as modified by the CRCA.

Summit County is the home of four major ski areas: Copper Mountain, Breckenridge, Keystone, and Arapahoe Basin. Together, these areas account for approximately 33% of the annual skier visits at all ski areas in Colorado. The rivers, streams, lakes, and reservoirs in the County support world class recreational fishing and boating activities. The agricultural sector continues to play a key role in the culture and economy of the County. The recreational economy and natural beauty of the County are water dependent and integral to the livelihoods of its residents and the experience of visitors. Ensuring the long-term viability of Summit County's recreational economy is a high priority for the County Government. Summit County's economy is also integral to the economy and values of the State of Colorado.

To maintain and restore healthy rivers and streams, the County strives to balance consumptive water demands with use for fisheries, wildlife, wetlands, riparian areas, and water quality. The County supports the use of water and water rights for multiple uses. It has adjudicated water storage rights and acquired contractual interests in water that can be used for environmental purposes as well as municipal, snowmaking, and other uses. Many of the projects included in the Colorado Basin Implementation Plan are designed to mitigate and improve stream habitat and recreational opportunities. The County is very interested in participating in the development of a basinwide stream management plan to assess the physical and biological needs and deficiencies of the ecosystem and identify intelligent water management practices to meet those needs.

Summit County has adopted a comprehensive Land Use and Development Code that includes regulations governing Areas and Activities of State Interest pursuant to C.R.S. § 24-65.1-101, et seq. Those regulations, as well as other standards and requirements of the Code, address and have been applied to new and extended domestic and municipal water systems, including both in-basin and trans-basin projects. The future application of those regulations to water projects is essential to ensure that the water supply, environmental, and recreational needs within Summit County are protected and enhanced.

Summit County supports and adopts the comments on the draft Plan that have been provided by the Colorado Basin Roundtable and the Northwest Colorado Council of Governments Water Quality/Quantity Committee ("QQ"). The following comments are intended to highlight specific issues that are of particular interest to Summit County.

1. <u>Relationship between Federal, State, and Local Government Permitting Authorities</u>.

Several sections of Chapter 9 of the draft Plan, concerning the alignment of state resources and policies, are of concern to Summit County as a water provider, donor basin, and regulatory authority.

(a) Land Use Authority and 1041 Permits.

The section of the Plan entitled "1041 Local Permits" should refer generally to local government authority to regulate water projects, in addition to the authority granted by the Areas and Activities of State Interest Act, H.B. 1041. Among other powers, these authorities include the Land Use Enabling Act, H.B. 1034, C.R.S. §§29-20-101 et seq.

This section states, at pp. 362-363, that "Local governments may not pass regulations that are completely prohibitive of the building of municipal water facilities and expansion of existing projects. This overstates and takes out of context the holding of *City and County of Denver by and through Board of Water Com'rs v. Board of County Com'rs of Grand County*, 782 P.2d 753, 762 (Colo. 1989):

> The Land Use Act gives Grand County and Eagle County the power to regulate, but not to prohibit, Denver's operation of extraterritorial waterworks projects. See *Town of Glendale v. City and County of Denver,* 137 Colo. 188, 194-95, 322 P.2d 1053, 1057 (1958); cf. *City of Thornton v. Farmer's Reservoir and Irrigation Co.,* 194 Colo. 526, 533, 575 P.2d 382, 388 (1978) (Water Rights Condemnation Act violated article XX because it gave municipal commissions power to prevent acts of condemnation by home rule cities).

First, the holding in that case was limited to projects sponsored by home rule cities, but the statement in the draft Plan would apply it to all project applicants. Second, this statement could be read to undermine the power of the local permitting authority to deny a 1041 permit for a project that cannot satisfy conditions that are legally imposed under H.B. 1041 and the implementing regulations. The Land Use Act specifically provides that the permit authority shall deny a permit for a proposed activity that does not comply with the guidelines and regulations. C.R.S. §24-65.1-501(4). Such denial does not abrogate the home rule authority of the permit applicant. *City of Colorado Springs v. Board of County Commissioners of the County of Eagle*, 895 P. 2d 1105, 1116-1117 (Colo. App. 1994) (*cert. denied* June 5, 1995).

(b) Framework on More Efficient Water Project Permitting Processes.

Summit County supports the early involvement of all stakeholders in the process for permitting water projects in order to make the process more efficient. However, the draft Plan appears to ignore the critical interests of local governments in this process, focusing rather on upfront coordination among state and federal agencies. As representatives of communities that are likely to be the most affected by the development of new or enlarged water projects, and as permitting authorities, local governments must be included at every stage of discussion and consideration of such projects.

(c) State Endorsement of Water Projects.

Summit County is strongly opposed to the proposal that the State of Colorado endorse or become a sponsor of a water project. The CWCB and other State agencies are better suited to the neutral role of facilitating discussions among competing interests rather than advocating for or against projects in permitting, especially when the State and its political subdivisions may have a regulatory responsibility. State endorsement has the potential to undermine the objective consideration of the impacts of and

alternatives to proposed projects by both state and local government permitting bodies. At a minimum, the State government should remain neutral on proposed projects until all State and local permits and approvals, including approvals under all applicable county land use and environmental regulations have been obtained. Summit County's perspective is consistent with the consensus of attendees at the Statewide Basin Roundtable Summit in March 2015. Attendees voted in support of State facilitation of discussions, not advocating for or against permitting projects.

(d) Bypass Flows.

In Section 9.1, the draft Plan states that in the context of certain federal agencies' decisions and proposed actions and other federal water related issues, the State "has had to grapple with federal assertions of authority to mandate bypass flows as a resource management tool." While Summit County appreciates the benefits of using State law to manage water resources where possible, including the CWCB's instream flow program, the State must recognize that its programs are not always adequate to protect the environment and natural resources that are critical to the local and regional economies.

Bypass flow requirements on transmountain diversion projects are of critical importance in protecting the environment in the headwater counties. For example, permit conditions on the operation of the Dillon Reservoir/Roberts Tunnel system, the Moffat Tunnel system and Williams Fork Reservoir, and the Homestake Project protect fish habitat and fish populations in the Blue, Fraser, and Eagle Rivers, respectively. The Federal District Court in Colorado has held that the Forest Service has the statutory authority to impose bypass flows as a condition to the issuance of land use permits for water projects. *Trout Unlimited v. U.S. Dep't of Agric.*, 320 F.Supp.2d 1090, 1105, 1106 (D. Colo. 2004), *appeal dismissed at* 441 F.3d 1214 (10th Cir. 2006). Conditions on special use permits by land management agencies, Section 404 permits issued by the Corps of Engineers, and recommendations of the U.S. Fish and Wildlife Service are often important to secure the recovery of endangered species, including the Colorado River Endangered Species Recovery Program that is essential to water use and development in Colorado.

(e) Multi-use Projects.

The draft Plan is replete with references to the benefits of multi-use water projects. Summit County concurs that future projects must meet the full range of water needs, including environmental flows. Summit County has itself appropriated water storage rights and secured contract rights to the use of water that can be used for diverse purposes. Multiple uses of water stored, diverted, and bypassed by Denver Water is a key element of the CRCA.

However, the CWCB has not consistently supported the appropriation and acquisition of water for non-consumptive as well as consumptive uses. In fact, it has opposed such efforts as an objector in water court in an apparent effort to protect what it perceived to be its exclusive jurisdiction of the use of *any* water in the stream channel, including stored water released from reservoirs. This has not been a constructive approach and has impeded the achievement of the goals that the Plan now seeks to accomplish. The CWCB should carefully revisit its policy on environmental uses of stored water and seek to cooperate in, rather than frustrate, creative solutions to nonconsumptive water shortages and water quality problems.

2. Inter-Basin Conflict Resolution.

Summit County joins with other west slope communities and water users in expressing deep concern about the potential for further diversions from the Colorado River basin to meet Front Range water demands. If the Plan is ultimately to succeed as a State plan, rather than an aggregation of individual basin implementation plans, it must address the perennial conflicts between the basins and resolve the underlying issues, including west slope water supply, environmental, and economic needs, the risk of compact enforcement, and the burdens of compact compliance.

Chapter 8 of the Plan and the Interbasin Compact Committee's Draft Conceptual Framework provide a starting point for these discussions. However, the Plan must make clear, and each basin must recognize, that the seven principles in the Framework represent an agenda for further study and negotiations, not an agreement on whether or how future transbasin projects may proceed. While inter-basin agreements such as the CRCA illustrate that consensus can be achieved on certain issues, they are also a reminder of how much work is required to reach an eventual understanding.

3. Conservation.

The CWCB provides excellent guidance and support to water providers that seek to implement meaningful water conservation plans. Summit County believes that there is significant additional potential to reduce the M&I gap through further conservation policies and requirements. Colorado should not wait for an extreme drought, such as the one now confronting California, before it develops specific standards for municipal water use. While it is true that "it requires constant communication and education to make water conservation a standard community practice," "social norming" alone will not achieve the necessary level of demand management. There is a role for the CWCB, as well as local water providers and land use authorities, to establish specific goals and requirements. Whether based on technically achievable levels of per capita water demand, ratios of indoor to outdoor use, or future development density, the opportunities to maximize conservation savings should not be lost as Colorado continues to grow. Summit County believes that the goal of the Plan should be a uniform high level of conservation, supported by the specific actions needed to achieve it.

4. Reuse.

Section 6.3.2 of the Plan includes helpful information about opportunities to meet future demands through reuse of existing and future reusable water supplies. Recent developments, including Aurora's Prairie Waters Project, have demonstrated that technology exists to more efficiently reuse available supplies. Experience in other states, such as California, as well as Denver Water's own potable reuse demonstration project in the 1980s, establishes the technical feasibility of direct potable reuse ("DPR"). Colorado law is generally supportive of reuse of imported and developed water supplies, although there is certainly room for additional legislative and regulatory flexibility, as noted in the Plan. The Blue River Decree in Consolidated Case Nos. 2782, 5016 and 5017 requires, as a condition of diversions from the Blue River by Denver Water and Colorado Springs, that each entity "exercise due diligence, within legal limitations and subject to economic feasibility," to "utilize such [transmountain] return flow by exchange or otherwise . . . so as to reduce or minimize the demands … upon Blue River water."

Summit County supports the recommendations in the Plan that Colorado should work through and approve a proposed DPR project and that the CWCB develop a program to educate the public, elected officials, and water utilities about the benefits and safety of DPR. Summit County also supports the potential IBCC action to develop a statewide agreement tying reuse to new supply development and agricultural transfers, as well as the principle that entities must first reuse all legally available reusable water supplies to the maximum extent possible before further development of Colorado River System water.

5. Land Use.

As a land use authority, Summit County appreciates the significant influence that land use planning and development have on water demands and supply. Section 6.3.3 of the Plan includes a number of helpful tools and suggestions that local governments can use to strengthen this linkage, while recognizing the importance of local autonomy. Summit County supports the recommended actions, including steps by the CWCB in consultation with the DOLA to educate and encourage local governments to incorporate best management practices for water demand management into their land use plans and approvals. The review of other BIPs suggests that local land use authorities in several basins, including those on the Front Range, would benefit from these actions. As noted by QQ in its comments, interactive cross-basin discussions about land use goals would increase understanding about how the planning and land use decisions in one part of the State affect the future of other parts. Counties and municipalities in each basin in Colorado have a responsibility to develop water wise land use development codes and practices in order to meet the water gap for their basin's future population.

Thank you for the opportunity to submit these comments. We look forward to working with you on future revisions and implementation of Colorado's Water Plan.

Sincerely,
Summit County Commissioners



Commissioner Dan Gibbs | Commissioner Karn Stiegelmeier | Commissioner Thomas C. Davidson

cc: James Eklund
Rebecca Mitchell
Jacob Bornstein
Kate McIntire
Gary Martinez

PUBLIC INPUT ITEM 185

American Rivers
Rivers Connect Us®

September 14, 2015

Colorado Water Conservation Board
Mr. James Ecklund, Director
1313 Sherman St.
Denver, CO 80203

RE: Comments on the Second Draft of the Colorado Water Plan

First, thank you for both the opportunity to comment and the ability to participate in developing the beginnings of a path to the future for Colorado, its rivers and water needs. The following comments from American Rivers are meant to be constructive and helpful, even when critical. We greatly appreciate the inclusiveness of this plan process and the improved plan reflected in the second draft. We also greatly appreciate the hard work and dedication of the CWCB staff and Board on this important project and look forward to the Final draft.

Comments are formatted as a narrative, following the format of the second draft. American Rivers is also signing on to comments submitted by Western Resource Advocates and other conservation organizations.

Chapter 3, Overview of Each Basin

1) Chapter 3, page 39, Overview of the Colorado Main stem: The statistics cited that "75% of the water in the entire basin originates in the state.", "trans-basin diversions account for approximately 5% of the total water supply, or approximately 500,000 acre feet per year." and that due to downstream obligations "as much as 70 percent of the river flows out of state." may well be true, but they are misleading by omission. Overall these statistics by themselves give the mistaken impression that there is a lot of water potentially available for development in the Colorado River main stem. It implies that a vast amount of water is flowing out of Colorado unused and "wasted" to downstream states. This simply is not true.

   Nearly all of the cited 500,000 acre feet of TMD's come from a single source, the upper Colorado River and its tributaries. Total diversions to the Front Range vary from 40% to as much as 80% from anticipated additional diversions. If you are going to cite the figures you do for the Colorado River main stem section, or any other West Slope basin, you need to temper them with the existing reality of the omitted figures.

2) Regarding the SW Basin concerns about ISF issues, Instream flow needs, both at high elevations and at lower elevations, even near the State line, are no less important nor somehow less legitimate than any other allowed water use and right. The SW Water Conservation Districts suggestion that a "carve out" should be required of future ISF's is wrong. It would create a limiting requirement on Instream flows that no other water right is subject to, making ISF rights a second class right. That is and should be unacceptable.

3) Republican Basin Challenges, page 47: "Depletions of the Ogallala Aquifer continue to reduce the amount of readily available water supplies for the agricultural economy in the basin". This is true throughout much of the state where ground water is being unsustainably mined for relatively short term economic gain. The Plan, and the BIP's, should start thinking about alternatives, both to the water supply and the transition that will eventually be required in the economic foundation of the basin.

   Ken Ransford of the Colorado Basin Roundtable has comments on this that I think need close attention, regarding the unsustainable mining of the Ogallala aquifer and the consequences that we ignore at our peril.

4) Colorado Basin concerns are downplayed or ignored, page 50: The Colorado Basin made a much stronger statement about concerns regarding water availability for any future TMD, new or otherwise, in its White Paper of late 2012, as well as in its BIP. These concerns are watered down to the point of being invisible here. They should be stated here with the same emphasis that the Colorado Basin intended. This may create a contentious note, but the plan needs to reflect all of the thinking across the state. The general public, who are largely ignorant of these things, need to know that there are strong points of disagreement on many points within this Plan. Ignoring them does the public a serious disservice.

5) Again, on page 50, there is also no real mention of the extensive public outreach conducted for the Colorado Basin BIP (unlike the mention about the Arkansas Basin's outreach) and the strong opinion of that public that stream and river environments be protected. This needs to be included along with a stronger emphasis on the Colorado Basin's concerns on water availability.

Chapter 4, Water Supply

1) The discussion on page 64 regarding the floods of September 2013 gives the impression that the rivers were somehow "misbehaving". The rivers were behaving as rivers, in many cases restoring a more natural channel structure that we had obscured through engineering and human activity regardless of what the rivers might do. Our actions over the past 100 years, especially the last 30 years, exacerbated the situation and we need to accept a large part of that responsibility.

While I do not want to downplay or dismiss the damage and economic loss these floods caused, I do want to suggest, and I believe the CWP should as well, that we should learn from this. It will happen again and re-engineering the rivers and infrastructure to be as they were before the floods will only invite future calamity. Rivers are hydrologicaly and geomorphologicaly dynamic systems. Floods, even large ones such as these, are part of that dynamic nature. If we want healthy river environments, as this Plan expresses, we need to recognize that and work with the river systems so that future massive flood events like those of September 2013, when they do occur, will be less disruptive to our human needs and infrastructure. Recent studies have shown that these floods are not nearly as rare as we have lead ourselves to believe and are likely to be more common in the future, especially with event exacerbations due to climate change.

2) Go ahead and say Climate Change on page 66. Call it what it is. There is a disconnection throughout the Water Plan and some of the BIP's regarding climate change and what the history of paleo-hydrology tells us. The realities are there, and the modeling, as well as the trending "proof" of the past decades are generally accepted. Yet many of the IPP's and ideas for New Supply discount climate change entirely. We need to reconcile the demands for additional water with the fact that the supply will most likely diminish considerably, not expand or remain as "normal". While some may not wish to face this reality and the limits or changes it will place on the status quo, the Colorado Water Plan must. Not to do so is not just irresponsible, but will render the CWP irrelevant.

3) Figure 4-10, on page 70, is very misleading. The bars for the Colorado River at the State Line include the already counted flows of the Gunnison River. While there are a few miles where the combined flows do create a larger Colorado River before flowing into Utah, the water "book keeping" shown here should separate the two rivers, or acknowledge and clearly show that the Colorado River depicted by this graph is in reality the two rivers combined.

4) Dust on snow events, page 71, are another example of a reduced flow scenario that is stated and then ignored by the BIP's. Earlier and higher runoffs are already a growing reality caused by a changing climate.

5) Additional water storage, page 72, must be considered, but we must also recognize that politically such storage will be difficult. It is easy for politicians and Roundtables to demand more storage, until the identify the specific "back yard" they want to fill, the source they wish to deplete and the existing uses they intend to deprive.

   There is also an inherent contradiction between the goals of maintaining and restoring healthy river environments while providing for recreation, and at the same time stating that Colorado needs to "use its legal entitlements before water flows out of the state". We are already there. Stream ecosystems and their needs for water don't end somewhere above the state line. Recreational water demands often flow across the boundaries into Utah or New Mexico.

The positive statement about storage at the top of the page is then seemingly contradicted by the qualifier about storage as a "critical element" at the bottom of the page.

6) Table 4-3 is another example of the disconnect between water supply decline and flows needed for other things. Again, I don't mean to discount the value of increasing capacity of some reservoirs, but the total here is over 1,750,000 acre feet. How realistic is this? Many of these expandable reservoirs would have to rely on substantial increases in trans-mountain diversions or substantial new ag-urban transfers. Neither of these of these are realistic for the amount of water shown here.

   Those reservoirs listed where the expansion would discount the need for accommodating flood flows simply should not be shown or included in this figure. The potential for future flooding such as occurred in 2013 should not be forgotten or ignored.

7) Growth may be inevitable, but the CWP should go into some greater detail on how growth and land use will affect our water supplies and rivers. It seems to me that the CWP is content with kicking this very important can down the road or over to "local" authorities. We need to start dealing with this issue now and at a State level. 1041 regulations can help, depending on where and how applied, but are only one piece in a broader array of solutions that must be developed. The South Metro area is emerging as a leader in this field, but one wonders if they are only doing so because their backs are against the wall. Other urbanized areas of the state that don not face the challenges that South Metro faces need to adopt similar policies and land use/water planning.

   One of the serious downsides to "local control" and the lack of uniform planning or regulation is the ability for growth to "shop" jurisdictions or communities to "market" potential, disregarding the broader long term and regional impacts their short term and "local" ambitions will have on the rest of us. The West Slope and West Slope agriculture should not be expected to bear the burden of supplying future water needs for short sighted "locally controlled" growth anywhere on the Front Range.

   The discussion does take into account the scenario that includes climate change, which is good, but it appears, once again, to ignore the fact that there will be far less water available, especially from the Colorado River, to supply the greatly increased demands from both growth and climate change.

8) Overview of Environmental and Recreational needs: Nearly all of the critical elements listed in the first sentence of this section on page 88 are dependent on flow. The flow regime, the natural hydrograph with appropriate quantity and timing, is essential. Because of this it is important to know what the actual flow needs are. River miles and acres of wetland alone are not an adequate measure of stream need for protection and

restoration. Connectivity, not just of habitat but of the interrelated physical structure in a stream is vital. Identified "focus areas" need to recognize this. Much of this connectivity is invisible from the surface and extend across many miles of river length. Rivers are more than just the channel and the riparian bank. The river environment is more than simply an assemblage of discreet "attributes" or species. If we are going to be honest about meeting the goals of environmental and recreational needs we need to understand the function of the entire, often complex river system. We will need to quantify the real range of dynamic water and flow needs for those systems. Identifying river reaches by mileage alone, without identifying and quantifying the real water "gap" is inadequate.

9) The State Instream Flow program is an important tool for providing at least some protection to streams and rivers in Colorado. This program needs to be expanded and strengthened, however, to take into account the real needs of rivers across the State. The CWP and various Basin BIP's often cite the State ISF program as the principal "protection" for rivers and streams and seem to leave it at that, as if nothing more needs to be done. Unfortunately, too few stream miles are so "protected", and too often that "protection" is inadequate; either too little water or, as with most streams, far too junior to be anything other than a dry and empty symbolic gesture. It is both disingenuous and misleading to give the public an impression that an Instream flow right will provide adequate "protection" for a stream environment in all cases.

   On another note, American Rivers is strongly opposed to the idea being put forward by the SW Water Conservation District to create "carve outs" from new ISF rights to accommodate future, undefined consumptive water development. This is speculation and must not be allowed. It also treats ISF rights and needs as secondary to what some perceive as more valuable rights. ISF rights are just as valuable, just as important and just as beneficial to human needs as any other decreed water right in Colorado.

10) I appreciate the CWP's concerns and ideas about cold water aquatic species in light of potential habitat degradation from rising temperatures due to climate change. The water management ideas in Figure 5-7 that increase storage using natural storage by beavers or simulating such small scale storage with "mimic dams" will help stream environments and ecosystems as a whole, not just the fish. It is important to keep in mind too that a healthy stream ecosystem is not the same as an excellent trout fishery. There are many Gold Medal trout fisheries throughout Colorado and the West created by the artificial environment below dams. These are highly altered environments, and while they may work well for the fish they often do little to improve the overall health of the river. The collapsing ecosystem of the upper Colorado River below Windy Gap is a good example.

Chapter 6, Water Supply Management

A general note on the purpose of the Chapter: Meeting Colorado's water "Gaps" first require that the Gaps be both defined and identified as to location. While this has been done for M&I and Agricultural water needs, it has yet to be done for environmental and recreational water needs. This needs to be done, and will be a key component of any realistic Stream Management Plan.

1) Page 102, second bullet: The West Slope, particularly the Colorado Basin, is strongly opposed to the notion of any new TMD. The facts simply do not support the notion that there is any water left to reliably develop from west of the continental divide. Even in wet years or years with above normal snowpack, there simply is no available water. We need any high flow "surplus" (there is no such thing as surplus water in natural well functioning river systems…) to retain the resilience and health of the rivers upon which much of the West Slope and State economy depend. We also need that water for building back up our sorely depleted "bank account" in Lake Powell. The possibilities of a compact shortage or curtailment loom larger as the drought continues. It is vital for the entire state that we do all we can to prevent or delay such shortage in the Colorado River system.

2) Page 102, fourth bullet: The endangered species in the lower Colorado and Yampa Rivers are a case in point for the argument above. The environment and the functioning, dynamic habitat that these species depend on is dictated by a natural flow regime and all that entails. Anything that diminishes that need, such as a new or expanded TMD will decrease the likelihood of success for these endangered species recovery programs. Diminished flows will also exacerbate the impacts from climate change on species not yet listed, but could be in the future if conditions and numbers deteriorate.

3) The third primary driver, Social Values, listed on page 103 is very important, not just for water management and land use. Countless polls, studies, responses to outreach efforts state wide all show that the people of Colorado are very concerned about the health of our rivers the viability of river based recreation. The value of more intensive resource utilization (dry up the streams first) has little support from the evidence to date.

4) Page 106, "Failing to implement the projects and methods outlined in the BIP's will result in an even greater water gap in Colorado's future". This is an overly broad statement that needs substantial sidebars. Many of the proposed projects are conflicting, contradictory or highly charged, with major disagreements between basins. Yes, the CWP "does not prescribe or endorse specific projects", but this statement could be read as an implicit endorsement for a new TMD or other projects to maintain an unsustainable status quo. For the CWP to be of lasting value it will need to identify

conflicts and contradictions within the BIP's and also suggest possible solutions or methods for developing solutions (like the Conceptual Framework).

5) Page 108, we do need to better understand how Ag water use supports environmental and recreational uses, beyond the obvious of higher and sustained flows in the Arkansas or the occasional wetland created at the downhill side of an irrigated field. Claims of environmental dependence on Ag water and return flows often have substantial validity, yet such claims are not universal. We need to understand this linkage between Ag and the environment much better.

6) Page 110, "Implement strategies at the basin level to meet medium levels of conservation…". The West Slope Basin Roundtables all strongly recommended high levels of conservation. Low to medium levels of conservation are inadequate when coupled with growing populations and demands and decreasing supplies from a changing climate. It assumes a water supply level that will either grow or at the worst remain consistent. Neither are likely to be true.

7) Are the estimates of need from some basins (Arkansas, page 112) based on the status quo, or do they take conservation into consideration when these numbers are created?

8) The South Platte's notion that "additional trans-basin water imports" should have "economic, environmental and recreational benefits that equitably accrue to both the western slope and the eastern slope" is difficult to swallow. Further depletions will only harm the western slope. Also, the eastern slope should not depend on or expect western slope water in order to improve or enhance their environment and recreational needs. That is robbing Peter to pay Paul and makes no sense.

9) On page 130, the Arkansas Basin lists as its first action to "Implement a critical IPP". What is this "critical IPP"? One can only assume that they are referring to a new TMD and the general reader should not have to hunt for it buried deep in appendices or meeting minutes. The Colorado Basin has stated clearly that one of its priorities is to sustain agriculture. Any new TMD will come at the expense of West Slope agriculture and rivers. Again, there is no new water to develop, only water already being used that will be reallocated.

   The final version of the Colorado Water Plan would do us all a great service, as noted previously, by identifying where there are conflicts and contradictions between BIP's and the Basins. Many of these have the potential to be highly charged, but conflict avoidance for the sake of simply keeping feathers unruffled should not be a primary goal of this Plan. We need to have the full table spread out before us in a manner where we don't need to hunt or infer what the underlying issues are.

10) Meeting Colorado's environmental and Recreational needs: The first sentence of this section, on page 137, is confusing. It is also somewhat contradictory. It also applies to

both M&I and Agricultural water gaps, but there is one significant exception. In most cases, despite the stated "goals and measurable outcomes", it will be impossible to adequately identify environmental or recreational projects and methods, beyond hypotheticals. Again, unlike the water gaps for Ag and M&I, we have no similarly defined or quantified environmental and recreational gaps. We simply do not know what we need to know in order to intelligently determine what projects and methods we need to fill the gap.

The Colorado Basin Roundtable (not the CWCB…) and partners developed the Watershed Flow Evaluation Tool to try and resolve this issue. As with many such high altitude modeling tools it raises as many questions as it answers, if not more. The Plan rightfully acknowledges this "gap" in understanding later on. That needs to expressed here as well.

11) The first and second long term goals on page 138 are good, although incomplete. If we are to achieve these we need to look beyond individual species, plant communities and isolated economics. We need to aim for promoting the restoration, recovery and sustainability of intact and fully functioning ecosystems upon which these all depend. The zoos of the world are crowded with endangered, threatened and imperiled species who have, for the most part, lost the functioning ecosystems, the homes and communities, that supported them. If we wish to avoid the draconian actions that the ESA brings we need to make sure that the endangered and imperiled species have a sound and functioning "community" to live and recover in.

12) We all support the concept of multi purpose projects with likely win-win solutions for water needs. However, we need to recognize that there will be many stand alone environmental projects that are no less important or urgent simply for the lack of a multi purpose or consumptive component. I'm sure the Ag ad M&I proposals could be similar, yet there seems to be less direct emphasis on those projects being "multi purpose", with an environmental component, than those proposed for environmental needs.

13) Overall these five statewide long term goals are admirable and something I hope we all can embrace and pursue. Making sure our rivers and streams have adequate water and flow regimes to accomplish this will be the trick. As mentioned earlier, ISF rights are a start, but by and large mostly meaningless under existing priority conditions for most streams in the state. Achieving these goals will require strengthening that program and the ability of water users to keep water in the river.

14) The Colorado Basin is pretty clear on its goal of protecting healthy rivers, streams, lakes and riparian areas. Yet the Plan is somewhat doubtful as to the ability of the identified projects to meet that goal. Again, this is due to the "knowledge gap". Hopefully Stream Management Plans will help address this situation.

15) On page 149, the South Platte states as a goal to "Develop tools and methodologies to adequately assess what is needed to maintain or increase aquatic, riparian and wetland habitats throughout the basin." Those tools and methodologies already largely exist. The only "development" would be in the application to specific situations. This holds true statewide.

16) The South Platte goal to "Promote long term sustainability" of its fisheries and stream ecosystems is admirable and should be applied statewide. It cannot be done, however, with water derived from another basin. We also need to understand that a "sustainable" fishery is not one that exists in a highly altered stream below a dam. That may be "sustainable" and Gold Medal, but its nothing more than a managed stream Disneyland, not a functioning self sustaining ecosystem.

    Again, I have to object to the characterization od the so called environmental and recreational "gap" by stream miles rather than quantifying actual water needs.

17) The SW Basin goal for protecting, maintaining, monitoring and improving streams is more close to the mark for what we need state wide. The SW Basin also gets that you need to evaluate the E&R "gap" by flow needs, not miles.

6.3 Water Conservation and Re-use

I will leave comments on this section to those more qualified than I, although American Rivers emphasizes both the need for high conservation goals and the need for greater efficiency in agricultural water use where applicable. It s great that the CWP recognizes the importance of human behavior in conservation. Our behavior and attitudes also shape much more about how we use and think of water than just conservation. It also comes from long established cultural attitudes and traditions that may, or may not, be well informed or reflect the societal values of modern times.

Table 6.3.1-1 – IBCC Potential Future Actions Summary, #7 is perhaps the single most important element in this section. You can't change behavior or influence legislation without significant public outreach and education. The real importance and enormity of this often escapes, or scares, people, resulting in efforts that may look good but fall far short of what's really needed. Tracking attitudes is good and can help measure the progress of messaging and media campaigns. But we need more than just a statement like this. We need to commit ourselves to a serious campaign and effort, with expanded resources and funding. We can't afford to just say it, fell good that we did and then forget it.

I am consistently amazed by the vast ignorance and misunderstandings of the public, from ranchers thinking they actually own the water and that the public has no right or need to know what they are really doing, to people on the street who assume that we wouldn't be able to dry up a stream or that water is a significant issue. If it were, wouldn't the media be paying more attention?

1) On page 168, the South Platte states “Ensure conservation, reuse and drought management plans take into consideration environmental and recreational focus areas and attributes”. Good, but while parks, ball fields and the urban forest have their place, we need to make sure that these engineered areas, which can easily be rebuilt, are not “protected” at the expense of far more complex rivers systems which are not so easily “rebuilt”.

Section 6.3.4 Agricultural Conservation, Efficiency and re-use.

This will become increasingly important in the future, for obvious reasons. My one comment here is that we ned to understand that both return flows and “unintended uses” that benefit the environment from agricultural diversions are complex and not well understood, nor are they universal. We will need to take a close look statewide at how these relationships exist and function in critical areas. This should be one of the primary focus points of a Stream Management Plan. Flood irrigation still has an important role both for agriculture and rivers, but we should not be so simplistic as to make blanket statements that might inhibit serious analysis and application of efficiencies where warranted.

Section 6.6 Environmental and Recreational Projects & Methods

I appreciate the language of this section and emphasis on the importance of environmental and recreational water needs, economy and values of Colorado. They cannot be overstated. I would however state that water is *the single most important element*, not just a “crucial” element, in “maintaining the environmental and recreational values important to Coloradans.” I’d also note that there are *no* natural environments *anywhere*, let alone in Colorado, that aren’t water dependent to some degree. Environmental resilience and how water flows in the ecosystem is an important part of this, and vital for the goals stated earlier for functioning, sustainable and self-sustaining ecosystems.

Again, it is equally vital that we know the actual water needs, the quantity and timing that dictate an adequate flow regime for maintaining healthy and functioning ecosystems. That is the only way the environmental needs, the environmental “gap” can be “meaningfully addressed in the near term”, or the long term. The same goes for recreational needs and “gaps”. Knowing the stream miles needing environmental or recreational attention is useless without knowing the water needs for these specific miles and the desired function and goals.

1) Policy bullet #1. We need to also prevent additional species from becoming “endangered, threatened and imperiled”. This can only be done by protecting, maintaining and restoring the habitats and full functioning ecosystems upon which they depend.

2) Policy bullet #4. Probably the single most important policy point made if we are to provide for "a strong environment that that includes healthy watersheds, rivers and streams, and wildlife." Now we need to put together the plan, or plans that will do that.

3) Funding. It is an understatement to say that funding for environmental and recreational needs is difficult. Funding resources through NGO's are not only scarce, they are ephemeral. Funding sources; grants and donors, tend to be short lived in the overall scheme of things. They do not have the relative permanence of taxes, fees or rates charged for service or other continuous revenue streams enjoyed by more traditional water supply entities. Often funding will last from two to five years at best, and we all know that serious water projects of any kind can and often do take much longer than that.

   This is a significant issue and must be addressed by this plan, a future iteration or Stream Management Plans. Simply suggesting partnerships, strategic or otherwise, with more traditional water project proponents is good, but not enough. There are many environmental project needs and possibilities that have no such partnership, yet are no less important for the goals and values stated earlier. "Balance" is important, but there are many aspects of a functioning natural environment that may be improved with multi-purpose projects but are less flexible and difficult to compromise than human designed and engineered systems. Compromising ecosystem function for the sake of strategic partnering to a point where it becomes meaningless is not "balance".

4) Reservoirs can provide beneficial stream flows downstream, but they can also do the opposite. Downstream channel and ecosystem function should be as important a "purpose" of a reservoir and not just seen as an "attribute" that can be "enhanced" so long as other direct human water supply purposes are meet first. That isn't much of a "balance".

5) I have noted earlier on the limits of the State ISF program. They are good to have, but not nearly the protective panacea portrayed in the first paragraph of page 245. We need to be honest about this and not misinform the public about ISF capabilities.

6) I would suggest that we need to change that program such that the need for a "natural environment that can be preserved" be modified to add a natural environment that can be restored with a new or additional ISF appropriation. Restoration is as strong a stated goal throughout this Plan as protection and maintenance are, yet the ISF program does not specifically allow for a water right to serve the purpose of restoration of a degraded natural environment by the current definition.

7) ISF rights should also be prioritized and sought to help prevent species from becoming endangered, threatened or imperiled. Priority given to species already listed is good, but its also closing a barn door after most of it has been emptied.

8) Wild and Scenic Rivers on page 251. "Currently, there are many river segments in Colorado that the USFS or the BLM have determined to be suitable for designation…". I don't think this is true. There are many segments that have been found eligible, but few that have been found suitable.

9) Again, on page 251, a Federal Reserve water right is not an automatic result of Wild and Scenic designation. It all depends on the language of the enabling legislation. As the Plan notes there are possibilities here of partnering with the State to create a State owned ISF right that can protect ORV's while precluding a Federal Reserve right. This is an option that should be pursued. Federal Wild and Scenic designation can be a viable tool for stream and river protection while incorporating existing uses of both land and water. We shouldn't let traditional cultural barriers and animosities toward Federal agencies get in the way.

10) Page 252, regarding the State of Knowledge, "It is apparent that there is additional work that can be done to develop common metrics for environmental and recreational attributes and to develop focused, basin specific knowledge of environmental and recreational needs". That's an understatement. If we have a large and unknown real water "gap" for environmental and recreational needs it is largely due to the fact that we have a larger "knowledge gap" of what those needs really are. As with environmental and recreational importance to Colorado's economy and "way of life", this cannot be overstated.

11) WFET – the Colorado Basin Roundtable initiated and directed the development of the Watershed Flow Evaluation Tool. The CWCB was a "partner", but the CBRT did the heavy lifting. They should at least get a mention…

12) Good emphasis for Stream Management Plans! The CBRT has formed an SMP Working Group that will begin developing greater detail and the beginnings of an SMP in early September. We will be refining these criteria and definitions and looking into the structure needed to develop an SMP.

13) The Conclusion on page 255 is good, if not understated. I've never liked the term "environmental and recreational attributes" however. These are not just attributes to be enhanced, they are needs to be provided for, and are just as important to the future of Colorado as any other agricultural or M&I water need.

14) Table 6.6-1, "5) Develop environmental metrics that can be used to evaluate future projects..." This should be done for all potential future projects, not just "new supply". We also should have metrics for evaluating the impacts caused by existing projects and for effectively evaluating mitigation stratagies.

15) IBCC Actions; a good list. Keep in mind as well that environmental and recreational "actions" may require going beyond the boundaries of specific reaches with well defined

needs. The connectivity and continuity of streams, and the impacts being mitigated may extend well beyond an identified stream reach, both upstream and down. Sediment and embededness issues in the upper to middle Colorado stem from flow alterations and traditional depletions far upstream.

Chapter 7 - Water Resource Management and Protection

This is an important and welcome chapter in the Colorado Water Plan. Much of the language and ideas under Watershed Health Science are applicable to the needs of river ecosystems in Section 6.6. This is exactly the science behind any environmental project, and the source of a great deal of our "knowledge gap" for environmental needs. It would be good if this language could also be repeated in the beginning of Section 6.6.

Watershed health considerations will also be an important component of any successful Stream Management Plan. As with a Watershed plan, SMP's will require a holistic approach, a watershed view and many stakeholder partners. Many local watershed groups already exist, some with watershed wide goals, others formed around a specific issue. The Colorado Watershed Assembly should be able to help here.

The idea of "water resource resilience from natural disasters…" is good, but must recognize that river systems are dynamic and that large flooding events are a part of a river system. We need to adapt to that, not try and force the river to adapt to a more static human use function. Streams will change course as old channels are avulsed and new ones formed across the flood plain. That's part of a healthy stream function. Often the "natural disaster" is a disaster only to us, but is a needed rejuvenation process for the river. The same can be said about "catastrophic" wildfire. What is a catastrophe to us may well be exactly what the forest needs to recover from past abuses or mismanagement and to get back on the road to long term forest health. We need to prepare our infrastructure for that, not try and prevent it. As we've seen all to well, proper preparation working with the natural river and forest systems will save far more in the future than continuing a tradition of misguided management hoping we can prevent the inevitable.

Work in restoring and managing "damaged streams" and "damaged watersheds" can be facilitated by human actions, but we also have to allow for these natural systems to heal themselves. In human disease and injury, it is as much or more of the patents native ability to heal as it is the interventions of medical science that result in a return to health. Watersheds, forests and rivers are no different. We need to also allow these natural systems the ability, and the resources (water) they need to make our efforts in assistance successful.

Chapter 8 - Interbasin Projects and Agreements

American Rivers supports the Conceptual Framework as adopted by the IBCC at their August, 2015, meeting in Keystone. Saying this however does not mean that American Rivers supports new transmountain diversions. We feel that all other options, including high levels of municipal

water conservation and efficiency must be adopted first, along with the previously mentioned behavioral and attitude changes needed. We also strongly support agricultural efficiency where applicable and the changes needed in Colorado law and administration to expedite these efforts.

Chapter 9 - Alignment of State Resources and Policies

9.1 Protecting Colorado's Compacts and Upholding Colorado Water Law.

"The Wild and Scenic Rivers Act and the Endangered Species Act are two federal statutes that could affect Colorado's ability to fully use its compact and decree entitlements"(page 326). This is another example of an unresolved conflict and contradiction within the Water Plan and within Colorado's sometimes schizophrenic approach to water use. If full use of Colorado's compact and decree entitlements means what it did in the 19th century, removing and consuming water from the rivers, then this statement is valid. But then the State's own ISF program and RICD's will also "affect" our ability for full use compact entitlements. This often stated rational for objecting to federal statutes or uses also contradicts the stated 21st century goals and values of maintaining and restoring a "strong environment" with healthy rivers and watersheds. For this, water, sometimes substantial amounts of water, must stay in the stream, even to the State line.

Federal agencies have just as much a right to water for legitimate environmental and recreational purposes as any other user in Colorado. Federal agencies have also been upheld in the courts for requiring bypass flows, flows needed to maintain the viability and purpose of federal lands where diversion structures are located. Assuring that federal agencies implement their responsibilities in such a way as to respect Colorado's entitlements and decrees is fine, but the State must also respect the federal agencies needs, entitlements and uses for the implementation of their missions and responsibilities.

It is high time that the State and Federal agencies get over their almost childish territorial animosities and work together. This may mean that the federal agencies do what they need to do in getting properly decreed water rights through the Colorado system, and that the State make some adjustments to its administration and laws that can help facilitate this. The land, the rivers and the watersheds are all connected in a continuum that is unencumbered by artificial jurisdictional boundaries derived from enlightenment era mathematics.

Bypass flows are a legitimate resource management tool, just as In-stream flow rights and agreements between partners for providing ESA water to the 15-mile reach or lower Yampa are. We need to develop a framework, common metrics and closer working relationships between all of the different federal and state agencies that deal with landscapes, rivers and water.

Demand management cannot be restricted as a "tool of last resort" (page 327). It is as important a tool in the overall mix as augmentation and storage management. Demand

management can be a significant first step in developing strategies that provide water quickly and inexpensively, while protecting ourselves against pending compact shortages. Right now demand management may work on a "voluntary, temporary and compensated" basis, but unless we grapple with the seriousness of growing demands, climate change and reduced supplies these may not be viable options in the future.

9.2 Economics and Funding

Water is both a private and public good (page 332). It is also more than a commodity that can be bought and sold (or the rights to use a public resource for private needs) or require fees for treatment. It is the one element essential for life, all life. There is a reason that Article 16 of the Colorado Constitution declares water as belonging to the public, the people of Colorado, before it goes into priority of rights. That said, water economics is tricky and people, the "owners", do not really understand what it costs to deliver and treat, nor do they understand the external costs of damaged ecosystems and altered stream flows.

Water, as precious and important as it is, has been too long out of sight and out of mind in all its aspects. It is as important to finding funds to reverse this situation as it is for funding projects.

9.3 State Water Rights and Alignment

CWCB Water Rights (page 345). As stated before, the ISF program needs to be strengthened. It needs to be more than a minimal protection for streams if we are to achieve the goal of a "strong" and resilient environment. Preservation of the natural environment *is* a human activity, a need and beneficial use of water.

It is important that the CWCB ISF rights, RICD's and the CPW water rights remain uncompromised in their decreed purpose for the sake of filling other water supply needs.

9.4 Framework for a More Efficient Permitting Process.

This is a good idea and should be pursued where practicable. However, it is imperative that the protections and public participation not be "streamlined" as well. Coordinating state agencies makes sense, as long as the such things as water quality and fish and wildlife mitigation efforts are not gutted for the sake of permitting speed. Coupling these efforts before and during the NEPA process, "frontloading", what is usually the most expensive, time consuming and often onerous process makes tremendous sense. The process detailed by the NWCCOG and the potential process suggested on page 361 and 364 provide an excellent starting point for this.

It is imperative that 1041 authority remain intact. Local authority in review and permitting is a vital component of both the permitting and planning process for water projects. 1041 provides an additional venue for meaningful public participation to address local impacts. The 1041

process could also provide beneficial guidance for the NEPA process if coupled with state agency efforts at the beginning.

State "endorsement" of any project is bound to be controversial. Any State endorsement or approval must not be allowed to become politicized. Any such endorsement must come only after full consensus with all stakeholders.

Basing an endorsement on a Draft EIS prior to release of a Final EIS is not a good idea at all. Final EIS's often change the alternatives and project parameters from the Draft EIS. Final EIS's are often informed by new or corrected information, resulting in different conclusions and recommendations from the Draft EIS. The State could find itself in the embarrassing position of having endorsed a project very different then the one that finally emerges. It is best that the State limit itself to comments and recommendations prior to the release of a Final EIS, just as everyone else does, without endorsement at that stage.

Any subsequent endorsement must be conditional, depending on how the States criteria and conditions for endorsement are incorporated in the Final EIS, ROD and subsequent permitting. More detailed criteria must be developed to guide such endorsement of new water projects, especially if a TMD is involved. Such criteria must be stringent and impartial, and not preclude the possibility that a project may well have to proceed without State endorsement, or even disapproval.

Streamlining and coordinating between stakeholders, state and local agencies through "lean events" can work, but don't leave out perhaps the most important "stakeholder", the public. A meaningful and robust public process for engagement, education, participation and comment must be a part of any increased permitting efficiency effort.

9.5 Outreach, Education and Public Engagement

Nothing could be more important if this Plan and subsequent projects are to succeed in providing water for all of our stated goals and needs. Without broad public support, understanding and engagement nothing in this plan is possible. There will be no legislative support or regulatory and administrative incentive to do what is needed in terms of laws, funding and projects. Its that simple.

The work of groups like PEPO, CFWE and others need to be strengthened and supported both in policy and funding. PEPO is often dysfunctional at best, at least on the West Slope (the CBRT has no Education Action Plan, nor has any been proposed). This needs to change. We need to create an outreach and education plan that utilizes multiple partners and that has sufficient political backing and funding to be effective. Increasing funds to the Roundtables from $2000 to $6500 is good, but is still pretty limited and limiting.

All of the Actions on page 388 need to be engaged, and more will come up as we move into the Plan implementation phase.

Chapter 10 - Critical Action Plan

Section V – All of these Critical Action groupings to support a strong environment need to make developing a strategic education program a priority. This should be done throughout the critical action plan listings.

This chapter should also have a discussion and listing that identifies areas of potential conflict and contradictions between uses, needs and BIP's as outlined in the tables of Critical Actions. Conflicts still exist; between different uses and values, between East and West, between the traditions and laws of the 19th century and 21st century needs. We need to engage and harness the "essential tension" created through these conflicts openly, working for constructive progress rather than defensive and divisive entrenchment.

We need also to keep in mind that funding for environmental needs may be required for stand alone projects as well as being part of multi purpose projects. Lack of a multi purpose component to environmental projects should not become an impediment to their accomplishment.

A fourth "critical action" for public education and outreach should also be included in the section V-c.

Conclusions

This Colorado Water Plan is a good start, but in many ways it is short of being an actual Plan. It gets a great deal of expressed needs, potential challenges and solutions out on the table. For the first time we have a detailed accounting of Colorado's overall water situation, problems and possible solutions. We need now to identify the critical issues and conflicts, perhaps through scenario planning as is often suggested in Chapter 10.

Beyond that we need a framework for addressing these conflicts and contradictions; between the different uses and needs as well as between the clashing values, cultures and traditions. One of the critical needs is for Colorado's water culture, laws and traditions to come out of the shadows of the 19th century and into the daylight of the 21st. Changes will have to be made, must be made if we are going to accommodate all needs with a diminishing supply. The Plan does talk about the need to change behavior patterns when it comes to municipal conservation, but not for other areas of the Plan. It should devote a section to the traditions and behaviors that have shaped our culture and uses of water since the 19th century. It should also address the places where these conflict and where changes are needed. Serious outreach and educational efforts will be needed, both to overcome the vast ignorance surrounding water and to change the often entrenched, outdated attitudes. Changes will come and the more thay can be made through an educated, cooperative process the better.

Real planning will likely come as much from Stream/Watershed Management Plans as anything else. This will take time, perhaps considerable time. The "knowledge gap" that exists when we start to get down to specific watersheds and stream segments is considerable. The needs for other supply projects will likely put more and more pressure on any such planning. Yet it must be done if this is to be a real Plan for Colorado's future. Expediting, or streamlining review and approval processes has merit, but must be done carefully. Getting a project approved and built without proper consideration of all aspects, impacts and alternatives will do nothing constructive.

John Fleck made a very astute point at the River District Seminar in Grand Junction. He pulled up the often cited graph from the BOR's 2012 report showing the historic trends of supply and use for the Colorado River, with the projected future patterns. Supply was based on modeling and use based on the seven states estimates and the status quo. The orange line of use has already crossed the blue line of supply and future projections show the "gap" only increasing. It is obvious that one line will have to concede and conform to the other, and its not the blue line of supply. That orange line is already conforming to the supply reality and we need to make sure that trend continues. In many ways we are moving into "undiscovered country". We need to be flexible, open minded and adaptable to change. We need to bend the orange line even more, so it is below the blue supply need.

Thank you for this opportunity to participate, comment and reflect on the Draft Colorado Water Plan.

Ken Neubecker
American Rivers
Associate Director, Colorado River Program
24 S. Meadow View Ct.
Glenwood Springs, CO 81601
(970) 230-9300
(970) 376-1918 cell

PUBLIC INPUT ITEM 187

White & Jankowski *Lawyers*

September 17, 2015

Via email to cowaterplan@state.co.us

James Eklund
Colorado Water Conservation Board
1313 Sherman Street, Room 721
Denver, CO 80203

Re: Comments regarding Colorado Water Plan

Director Eklund:

I am writing on behalf of ConocoPhillips to provide comments on the second draft of Colorado's Water Plan released in July 2015 (Plan). ConocoPhillips applauds the Governor's and Colorado Water Conservation Board's efforts to create a comprehensive statewide water policy.

ConocoPhillips appreciates the Plan's consideration of the energy industry's water needs. Colorado has an abundance of natural resources and a great potential for future energy development, including oil shale development. ConocoPhillips disagrees with the statement in the Plan that "all indications are that oil shale will not become commercially viable by 2050." Plan at 123. Indeed, the Yampa-White Basin Implementation Plan, on which the quoted prediction is based, recognized the need to plan for multiple future scenarios including the development of an oil shale industry in northwest Colorado.

ConocoPhillips is developing conditional water rights for oil shale and intends to use those water rights when oil shale becomes economically feasible. There are numerous factors that influence oil prices in the global market and it would be premature for the Plan to predict the fate of oil shale industry 35 years into the future. ConocoPhillips supports the approach in the Yampa-White Basin Implementation Plan to prepare for future oil shale development. As the Plan notes, the energy extraction industry represents only a small proportion of the water used statewide.

ConocoPhillips understands the importance of water to all Coloradoans and respects the numerous uses of water allocated under the prior appropriation system. It supports the provisions in the Plan calling for efficient water use and cooperation among different types of users. In an effort to help minimize future agricultural water shortages in the White and Colorado River basins, ConocoPhillips intends to rely primarily on conditional water rights development, rather than agricultural transfers, for its oil shale water supply. ConocoPhillips appreciates the opportunity to comment on the second draft of Colorado's Water Plan and looks forward to participating in future conversations regarding the energy-water nexus.

White & Jankowski, L.L.P.
Kittredge Building, 511 Sixteenth Street, Suite 500, Denver, Colorado 80202
(303) 595-9441 Fax (303) 825-5632 mail@white-jankowski.com

Thank you for your consideration of these comments on the second draft of Colorado's Water Plan.

Sincerely,

WHITE & JANKOWSKI, LLP

Matthew L. Merrill

Water counsel for ConocoPhillips

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Saint Vrain Anglers Trout Unlimited

SVATU

September 17, 2015

Colorado Water Conservation Board
1313 Sherman Street, Suite 721
Denver, Colorado 80202

Re: Colorado's Water Plan

Dear Board Members,

Thank you for the opportunity to provide input on Colorado's Water Plan. We are grateful that the Colorado Water Conservation Board ("CWCB") has been open to public input throughout the water planning process. Water is at the crux of so many issues for the future of our state. It's critical that all citizens work as partners to plan our future water uses. As one of the 23 local chapters representing Trout Unlimited ("TU") in the state of Colorado, we are writing to endorse the comments submitted by the state council, Colorado Trout Unlimited (CTU).

We strongly support the overriding principles of: Innovative water management techniques and irrigation infrastructure upgrades that improve agricultural operations and increase river flows; funding to ensure that each basin roundtable adopts a stream management plan (SMP) and implements projects to meet gaps identified through the SMPs; and the rejection of all new trans-basin diversions (TBDs) unless the project proponent (a) is employing high levels of conservation; (b) demonstrates that water is available for the project; and (c) makes commitments that guarantee against environmental or economic harm to the basin of origin.

As a Front Range chapter sitting within a highly agricultural area, we are sensitive to the volume of water that comes into our drainage from the trans-basin diversions and the balances that must ultimately be achieved to preserve our heritage. Parallel to these considerations, water conservation as a lifestyle is an important piece of the strategy to respond to the demands of a growing population in our area. We believe that water conservation goals should exceed the "high conservation" scenario analyzed in the Statewide Water Supply Initiative ("SWSI"), which contemplates savings of 460,000 acre-feet by 2050.

CTU's comments make a number of suggestions that build and expand upon strategies outlined in the Colorado Water Plan. We'd like to echo the comments regarding the integration of land use and water planning, and encourage that the Colorado Water Plan incorporate a vision for water use to be factored into land use planning as well as land use needs to be factored into water conservation planning.

Finally, as representative of the St. Vrain Creek Watershed, we would like to emphasize how important continuing funding for recovery projects following the 2013 floods are to our basin's future ability to manage water resources. The damages to infrastructure, property, and environment will ultimately take decades to address. It is essential that communities and the

greater citizenry they represent have the state's continuing support to enter our new water future with greater sustainability and resilience.

We thank you, again, for considering and incorporating Colorado Trout Unlimited's comments. We look forward to reviewing the final draft of the plan and to working with the CWCB towards plan implementation.

Sincerely,

Erik Wilkinson
President
St. Vrain Anglers Chapter Trout Unlimited

Barbara Luneau
Conservation Chair
St. Vrain Anglers Chapter Trout Unlimited

cc. David Nickum

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First Name: Lawrence
Last Name: Scrima
Affiliation:
Email: lscrima@gmail.com
Phone (Example: 000-000-0000): 303-755-8129
Cell Phone (Example: 000-000-0000): 303-917-5161
River Basin: Metro
Constituent Group: General Public
Comments to be considered in Colorado's Water Plan:
Comments to CO Water Plan 2nd draft by Lawrence Scrima
Seems like we are giving away and allowing to be permanently destroyed, our most valuable natural resource: water!
Given recent disaster of the contamination of the Animas River from the Gold King mine and about 23,000 other mines in Colorado with potential for additional spills into our water ways, reservoirs and ground waters, we need to be proactive going forward, to prevent these water disasters and to tax those responsible for the waste and inadequate disposal of waste and decommissioning of such mining sites, including fracking and oils wells!
The analogy is that of landlord to tenant, where the landlord leases the house, apartment or land and also collects a deposit, should the tenant damage the property or leave it in a damaged state, the deposit should cover that extra clean-up and repair to the property. Collecting an up- front deposit will mitigate the usual scenario of the company going bankrupt and being unable to pay for their damages scenario. Currently we are leasing our public lands and waters at rock bottom prices, failing to collect a large deposit, inadequately supervising the people's water to prevent abuse, destruction, toxic spills, and inadequate ability to mount rapid response to damages (to minimize destructive effects).
Therefore, I propose that the above oversight in planning be remedied by writing into the Colorado Water Plan adequate provision to charge a more appropriate current and near future value for public land and resources leases and a non-refundable or partially refundable deposit proportionate to pay for possible or likely harm and also sufficient to cover the repair and clean-up of the leased land or resources that the leasee used and damaged. Clean up of such property caused by a company should not be the responsibility of Colorado or Unites States taxpayers, but rather that of the company whose activities created harm.
The non-refundable Deposit excess should be used to fund land and resource supervision, inspectors, education about our resources to students and the public and a public news updates, weekly on any damages, harms, etc., research and future planning input to optimize and protect public lands and resources.
Please keep in mind that all life is dependent on clean water. Any industry that destroys water so that it cannot be readily cleaned for further use, such as the oil and gas industry with shale fracking and some other mining and agricultural (especially large Ag using chemicals, fertilizers, pesticides and/or GMO products) industries, should be additionally heavily taxed for their destruction of water, to strongly discourage such practices, since they will have very long term, if not permanent detrimental effects on all life on the planet for many generations.. Such water use would never have been allowed if it were not for the un-witting approval of the Haliburton Loophole (i.e. federal congressional approval of unique exemptions for oil and gas industries re compliance with to the Clean Water Act, Safe Drinking Water Act, CERCLA community right to know act, Clean Air Act and toxics acts that would otherwise prevent them from conducting shale extraction with such heavily polluting processes). Colorado should lobby to have these federal waivers revoked, since their impact constitutes a crime against humanity and all life on the planet!
Let's not continue to ignore these usurpers of life, water and our pursuit of continued existence for the likes of short term profits by some very greedy people and companies!
Since I have lived in Aurora, CO for the last 25 years, I have noticed when disasters occur in other States, especially California, our population takes a sudden increase. At the board it was mention of expected doubling of CO State's population by 2050, and given the devastating draught and wild fires in California, I think our population will double around 2025!
Old Scout Motto: Be Prepared! I hope you do the right thing for all Colorado, Regional and indeed the whole population of the USA, by acting responsibly and in our best faith as best stewards or our most precious resource, Water!
FYI Also see:
http://blog.nwf.org/2015/08/8-hard-truths-about-hardrock-mining/
8 Hard Truths About Hardrock Mining
1 8/17/2015 // By Lacey McCormick
The Gold King Mine disaster in Colorado was an accident waiting to happen.

It's not a unique situation, in part because the laws regulating mining are inadequate on several fronts.

Rivers shouldn't be the color of mustard. But that's just what happened earlier this month after the EPA's attempts at cleaning up a leaking, abandoned mine accidentally released 3 million gallons of contaminated water into the Animus River in Colorado. The images were shocking, but the big picture behind this disaster may be even more so.

What's been missing from most of the media coverage is that decades of Congressional inaction set the stage for this crisis—and the fact that something similar could happen again elsewhere, unless Congress steps up.

Photo of the Animas River soon after the Gold King spill. Photo by Tom McNamara of the La Plata County Emergency Management Office

1) Abandoned Mines are Nationwide

There are an estimated 23,000 abandoned mines in Colorado and as many as half a million across the nation. Mining has contaminated the headwaters of more than 40 percent of the watersheds in the West.

Remediation of the half-million abandoned mines nationwide could cost as much as $50 billion. The Gold King mine had been leaking for years and it's not the only one: more than two hundred mines in Colorado leak heavy metals into rivers and streams, in amounts estimated to be equal to at least one Gold King disaster every two days.

2) Archaic Law Still in Effect

Many of the abandoned mines nationwide—including in the Silverton area where Gold King is located—were developed after the 1872 General Mining Law was passed. This law, originally aimed at encouraging the settlement of the West, still allows miners to extract gold, silver, and uranium from public lands without any royalties to taxpayers. And until fairly recently, the federal government was handing over valuable lands to mining companies for a mere $5 an acre. Over the decades, an area of public lands the size of Connecticut has been essentially given away. This outdated law remains the basic template for mining on nearly 500 million acres of public land.

3) No Clean-Up Funding

Congress has not required any sort of remediation funding or royalty payments for mines since the 1872 General Mining Law was passed. By contrast, the coal industry has been required to pay a fee per ton of produced coal into a federal/state cleanup fund for abandoned mines since 1977. But the hardrock mining industry has been fighting efforts to create a similar fund for decades.

4) No Good Samaritans

The hardrock industry has also fought off efforts to pass more narrowly-focused remedies, particularly "Good Samaritan" reclamation legislation. This type of law would allow private parties to clean up abandoned mines by lifting personal party long-term legal liability for water quality while working on the site. Right now, this potential for liability serves as an enormous disincentive for private parties to attempt tackling even smaller cleanup efforts. Important note: Private cleanup would not have been a viable or responsible tool for handling a situation of the magnitude at the Gold King mine.

5) Underfunded Superfund

The abandoned mining area around Gold King was targeted by the EPA for a potential Superfunddesignation in the early 1990s, but the EPA's overtures were rebuffed by local authorities and mining companies for fear of damaging property values, tourism and the mining industry. However, had cleanup begun 25 years ago, it is quite possible the disaster on the Animas would not have happened today.

Superfund is the best tool we have for complicated cleanup situations like this one, but the program has been underfunded for decades. Today, the American people are paying to clean up the sites industry has abandoned—with the result that funding has declined. The EPA estimates that approximately 49 million people live within 3 miles of Superfund sites.

6) Clean Water Act Loopholes

Pollution problems are not limited to abandoned mines. Modern mines also cause pollution issues, and federal regulations are inadequate here too. In addition to the limitations of the 1872 Mining Law, there are two "mining loopholes" in the regulations implementing the Clean Water Act. These loopholes essentially allow mining companies to "treat" their waste by damming up the nearest river valley and using wetlands and streams impounded by the dam as a toxic waste dump.

Controversial projects such as the proposed Pebble mine in Alaska, Montanore mine in Montana, PolyMet mine in northern Minnesota, Mt. Emmons mine in

Colorado, Haile mine in South Carolina all rely on these Clean Water Act loopholes.

7) Disproportionate Impacts on Tribes
Collectively, our nation's laws serve to encourage mining near reservations, and have even allowed mining companies to lease minerals on tribal lands, sometimes without tribal consent. The result: American Indians and Alaska Natives have disproportionately suffered the impacts of mining while enjoying few of its benefits. In a continuation of this long trend, this spill flowed through Navajo Nation. Tribes face more threats as a new wave of exploration and mining projects sweeps through the country.

8) Fish Harmed by Mining
Before the Animas River spill, drainage from the Silverton mines had already wiped out all the fishin the stream closest to the Gold King mine. The Durango Herald reported last year that ongoing mine pollution had killed three out of four of the fish species in the Upper Animas and decreased the volume of insects and number of bug species, the food fish rely on. The long-term impacts of this event will need careful study.
Last year, scientists at Michigan State University reported that mining can damage fish habitats miles downstream, and even in streams not directly connected to the mines. For example,pollutants from a mine in a headwater stream in Kentucky were thought to disrupt the breeding grounds of bass in Tennessee rivers.

By August 14, the color of the river had returned to normal, but the long-term impacts will need careful study. Photo: EPA
Two Immediate Steps Congress Can Take
The EPA has recently finalized a narrow piece of regulation dubbed the "Clean Water Rule" that would ensure that the types of headwater streams often affected by mining waste would qualify for Clean Water Act protections—a point left unclear by two controversial Supreme Court decisions. This rule could help prevent future disasters like the one on the Animas River and would at least allow for better enforcement if something terrible did happen.
We also need to address the bigger picture–and it looks like the disaster on the Animus will inspire bills on this topic in the next legislative session. Congress needs to reform the 1872 mining law so industry pays royalties on valuable metals and minerals extracted from land owned by the public. These royalties should feed into a national trust for cleaning up abandoned hardrock mines.
Ask Congress not to block or delay the Clean Water Rule now!

Tell Congress to end 140 years of public subsidies for the hardrock mining industry and use the resulting royalties to clean up toxic mines!

from Wildlife Promise
Tags: clean water rule, hard rock mining, Northern Rockies and Pacific Regional Center
By: Lacey McCormick
Lacey McCormick's Bio // Archive of Posts
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Section S.5.8 of the Plan mentions that "many South Platte water providers consider it irresponsible not to consider the potential for climate change in making water supply and demand projections". Though I am clearly not a water provider, I am in agreement.

Although it is difficult to assess how Colorado will be impacted we do know quite a bit—the National Climate Assessment projects in the Southwest *"increased heat, drought, and insect outbreaks, all linked to climate change…increased wildfires. Declining water supplies, reduced agricultural yields, health impacts in cities due to heat…".* Further it states *"tourism and recreation, generated by the Southwest's winding canyons, snow-capped peaks, and Pacific Ocean beaches, provide a significant economic force that also faces climate change challenges. The recreational economy will be increasingly affected by reduced streamflow and a shorter snow season, influencing everything from the ski industry to lake and river recreation."* And *"projected regional temperature increases combined with the way cities amplify heat will pose increased threats and costs to public health."*

These are real threats that are not adequately addressed in the Plan. Additionally, to approach our water issues without addressing our State's significant contribution to greenhouse gas emissions, and what we can and should do about it, is to engage in band-aid measures rather than preventive measures. Many studies exist that propose ways to do this and I won't elaborate on them.

S.3.2 In this context the concept of "beneficial" use must be revisited taking into account the externalities mentioned above. It would lead me to believe that use of water for oil, gas, and coal is not a beneficial use.

Fossil Fuels

Very little mention is made in the Plan to the impact of the oil and gas industry on water. Although I understand that only a small percentage of Colorado water is used for hydraulic fracturing (natural gas development) compared to agricultural use, this water (using current technology) is permanently removed from the hydrologic cycle, or worse may contaminate aquifers (the recent EPA study did *not* claim that contamination was *not* happening, only that there was 1) no "widespread systemic" contamination and 2) not enough data to confirm if there was.

Colorado has some 55,000 hydrofractured wells. According to my crude estimate, at an estimated twenty-five fractures per well at 400,000 gallons of water per fracture* (10 million gallons per well) the **hydrofracturing process alone has used 550 billion gallons of water.** And more water is use before the product actually reaches a consumer.

Although I am not claiming an association with hydrofractuing, I noted that Weld County (figure S-3) where the greatest amount of oil and gas activity is happening has the highest projected gap of acre-feet of water per year, almost twice that of Denver.

Sixty four percent of Colorado's power comes from coal-fired plants (http://www.eia.gov/state/?sid=CO). According to the Union of Concerned Scientists, coal-fired power plants have significant impacts on water quantity and quality including (locally) water to cool the steam used to make electricity and local coal ash dumps.

Growth

The projected growth rate (S.3) is not sustainable. Economic growth is not sustainable unless it is directed away from those activities that contribute to climate change. Externalities such as wildfires and increasing health costs must be taken into account.

Agriculture vs municipal use

S5.5.4 Yes, this is a great concern. This Plan does not mention the purchasing of water rights for oil and gas development. However, aside from that, irrigation methods need to be changed to those that are more efficient, small farmers who grow food for people, as compared to large farms that grow fodder for animals, should be protected (you likely know the amount of water needed to produce a pound of beef). Use of pesticides, herbicides, fungicides, fertilizers and other practices must be minimized as these are polluting our water sources and destroying agricultural land (http://water.epa.gov/polwaste/nps/agriculture.cfm).

S.3.2 Municipal per capita water use should *not* be based upon how big a property a person is able to buy and how much blue-grass they want to plant but rather should be allocated per person. It is a common resource that should be shared equally.

Thanks for doing the Plan. I could make many more comments and wish the comment period was better publicized.

Barbara Donachy, MPH
2216 Race Street, Denver CO 80205

* Hydrofracking: What Everyone Needs to Know
Alex Prud'Homme (2014)

PUBLIC INPUT ITEM 192

City of Thornton

Infrastructure Maintenance Center
12450 Washington Street
Thornton, CO 80241-2405

Infrastructure Department
720-977-6600
FAX 720-977-6202
www.cityofthornton.net

September 17, 2015

Mr. James Eklund
Director, CWCB
1313 Sherman Street, Room 721
Denver, CO 80203
cowaterplan@state.co.us

RE: City of Thornton Comments to the Colorado Water Plan 2nd Draft

Dear Mr. Eklund:

On behalf of the city of Thornton (Thornton), I would like to express my appreciation to you, your staff, and the Colorado Water Conservation Board (CWCB) for your efforts in developing the 2nd Draft of the Colorado Water Plan (CWP) and for your request for comments. Thornton has actively participated in the development of, and endorses the comments submitted by the South Platte Basin and Metro Roundtables, as well as the comments from the Metro Mayors Caucus. Thornton respectfully submits the following additional comments.

Chapter 1: Introduction

Thornton agrees that water is important for all sectors in all regions in Colorado, and that the right balance of strategies is critical to successful water management in the state. We would like to emphasize the importance of balance. Thornton, like many providers of reliable and clean drinking water, has spent decades building a balanced, stable, efficient, and resilient water system within the existing legal framework. In developing its own system with competing uses and demands, variable supplies and other uncertainties, the city has adopted a balanced approach to water management. We recognize that challenges are around every corner, and while values can help guide us toward solutions, each challenge requires a unique assessment that is hammered out on the ground, with thorough understanding of real data and real trade-offs. It is critical that the CWP embraces this concept of balance, and allows site-specific solutions to emerge.

Chapter 6, Section 6.3.1 Municipal Water Conservation

As a water provider with a long-term commitment to water conservation, Thornton strongly supports the CWP's vision of a strong and growing conservation ethic that is shared by all water users in all regions of the state. Thornton is a leader in municipal water conservation, and has historically maintained one of the lowest residential daily per capita water consumption rates among cities in the Front Range. Thornton's conservation approach is focused on educating customers and building a sustainable conservation ethic in the community, and this effort has already resulted in a 19

percent decrease in per-account billed water usage of residential, commercial, and irrigation accounts from 2002 to 2013. Thornton welcomes the support of the CWCB in achieving future conservation savings and acknowledges the value in attempting to quantify that potential, but believes that given the current state of available conservation data, it is premature to set the numeric stretch goal outlined in the CWP.

In addition to the conservation action items that address outdoor irrigation efficiency, Thornton recommends that the CWCB include landscape-related businesses and organizations in its list of partnerships. Having landscaping, irrigation and property management companies as informed and engaged partners is critical to both achieving and sustaining long-term outdoor irrigation savings.

House Bill 10-1051 requires that water providers submit annual water usage and conservation data to the CWCB. The collection and submission of this data is often in addition to internal analysis that water providers complete to assess their own programs. Thornton commits resources otherwise dedicated toward conservation initiatives to comply with this legislation, and it would be helpful if the CWP included a more thorough discussion of the current state of this data and how it will be incorporated into the CWP.

Chapter 6, Section 6.3.2 Reuse

Thornton supports the CWP's endorsement of reuse options. However, there is still insufficient discussion of indirect reuse options such as augmentation plans and river exchanges. These forms of reuse are already occurring, often require less infrastructure, and provide opportunities for projects that benefit multiple sectors. For example, Thornton relies on river exchanges to move its reusable supplies to the location of its demand. These sorts of operations allow reusable supplies to augment river flows as the reusable supplies make it to their final destination. In addition, many municipal water suppliers have entered into arrangements to provide their reuse water as augmentation water to irrigators. These indirect reuse options should be more thoroughly explored and encouraged in the CWP.

Thornton suggests that the Regulatory Environment action item be expanded to include Federal nexus issues regarding reuse. When Federal review is triggered for water projects that recapture reusable supplies from the river, it can be challenging to communicate to the Federal agencies the role reusable supplies play in river hydrology. The use of these reusable supplies does not result in new depletions to the river; however, proving this distinction can be difficult. Thornton encourages the CWCB to engage Federal agencies so that the agencies have an understanding of reusable water rights and how those reusable supplies comingle with natural river flows, and so water suppliers can have the ability to maximize their existing rights.

Thornton supports the CWCB's involvement in facilitating ways to allow more flexibility of reusable supplies as described in the CWP Action item "Examine mechanisms to improve the ability to market, sell, and share reusable supplies." Agility is the key to

optimizing reuse as a source of supply, and Thornton encourages the CWCB to explore legal and administrative changes that could aid in that outcome.

Chapter 6, Section 6.3.4 Agricultural Conservation, Efficiency, and Reuse

Thornton supports mechanisms that provide for increased flexibility for the use of transferred agricultural water, and recommends that this section be expanded to include more discussion on, and studies of, how traditional agricultural transfers could be operated to achieve the goals of Alternative Transfer Methods (ATMs).

For example, Thornton has operated its transferred water rights to provide many of the ATM goals identified in Colorado's Water Plan, including:

- Though the water rights and farms were acquired in the mid-1980's, Thornton's operations allow for continued farming. The majority of Thornton's farms are still in irrigated agricultural production, and all of the water is currently being used for farm irrigation.
- Thornton will remove water from irrigated farms only as the water is needed in Thornton, providing for a multi-decade transition from irrigated to non-irrigated farm operations.
- Thornton uses local agricultural vendors to perform maintenance activities on non-leased farms, and sells grass from non-irrigated farms to local producers, thereby benefitting and sustaining the local agricultural community.
- Thornton makes voluntary payments in lieu of taxes to local taxing districts, helping to ensure these districts and the local communities remain viable.
- Thornton provides augmentation water to offset well depletions for two irrigation well augmentation programs (Central Colorado Water Conservancy District and Lone Tree Members Accretion Company). This allows for agricultural production to continue on the farms in these programs.
- Similar to the *Morgan Ditch Company & Xcel Energy* ATM, the Thornton facilitated a short-term lease and Temporary Substitute Supply Plan to provide emergency water to the Platte River Power Authority during a drought period.

Thornton concurs with the CWP recommended actions that would facilitate more flexible operation of traditional agricultural transfers to provide more of the benefits identified for ATMs. Specifically, the city of Thornton supports, and requests that the CWCB take the lead on:

- After a thorough outreach and stakeholder process, consider legislation that would establish protections for municipal owners of permanently transferred water rights that choose to go through a Water Court process to request that their permanent agricultural transfers be allowed to be operated as ATMs. This concept could help ensure that water rights owners could still rely on their previously adopted decrees if the Water Court process for an ATM option yields an unfavorable outcome.

In addition, Thornton suggests that the CWP acknowledge that the impediments to ATMs from an irrigator's perspective are also the factors that drive Municipal and Industrial (M&I) water suppliers, and the Water Court, to traditional "buy and dry" instead of ATMs. M&I water suppliers don't *want* to "buy and dry", but are constrained into "buy and dry" transfer decrees that don't allow for optional re-irrigation of a farm. The Water Court process generally hasn't allowed re-irrigation because Water Court case opposers are concerned about injury to their water rights, the accuracy of historic consumptive use analyses, and the potential for expansion of use – the same reasons cited in the CWP for why ATMs are difficult. In addition, concerns about weed and dust management also lead to "buy and dry", as M&I users are required to establish stable non-irrigated uses (revegetation or otherwise) on formerly irrigated lands. These land management issues will be present in any traditional or alternative transfer that includes temporarily or permanently removing irrigation water from a farm, but these are only mentioned as issues in the "Rotational Fallowing" description in Table 6.4-1.

Chapter 7, Section 7.3 Water Quality

Due to its proximity to urban rivers, Thornton's ability to maximize its water supplies has been impacted by degraded water quality. Thornton fully supports the statement in Executive Order D2013-005 that states "Colorado's water quantity and quality questions can no longer be thought of separately. Each impacts the other and our state water policy should address them conjunctively." Further, Thornton supports developing a quality and quantity integration goal as part of Colorado's Water Plan.

Thank you again for your efforts, and for your consideration of these comments.

Sincerely,

Emily Hunt
Water Resources Manager

EH/dm

cc: Bud Elliot, Deputy City Manager – Infrastructure
Mark Koleber, Water Project Director
MLCR

PUBLIC INPUT ITEM 193

I think it is evident that changing the public mindset, behavior and resulting consumption will ultimately be required if we are to sustain our natural resources. This includes commercial and government entities.

Much emphasis is on changing nature, I would submit we need greater change in human behavior. For instance, I do not see enough emphasis on changing the way we currently develop land and landscape developed properties in the Front Range area.

Now is the time to change the way land is developed, both in the amount of land 'lost' to building projects, and landscaping choices. This applies also to public areas such as medians, highway borders, and parks, for example.

In short – if the *majority* of the landscaping needs to be watered, it's the wrong landscaping.

If we can create a vision of restoring and preserving areas of native plants and vegetation; if we can create a policy that for every foot of developed land, a foot of land needs to be left in its natural state; not only can we change the way people see land, but we can change unnecessary water consumption and waste and provide a way for nature to replenish the water supply.

We would be remiss if we did not implement xeriscaping for all commercial properties, and promote sod as only as a small percentage of any residential yard. Using recycled water only for commercial and residential landscaped areas would be a significant step in creating the mindset that consumption is based on available resources – not that available resources are unlimited.

This is only one step, but can have a significant impact. The impact would be greater if the state begins to require developers to leave a percentage of each development in a natural state – reducing water use and supporting replenishing of water resources.

Lastly, consider preservation of our aquifers and ground water to be a priority. Making this a priority would require that we rethink our mining practices, chemicals and pesticides used in agriculture, fracking, and uncontrolled paving over of our grasslands as the Front Range area expands.

PUBLIC INPUT ITEM 194

To The Colorado Water Conservation Board

I am writing to offer my comments on the revised draft of the Colorado Water Plan. First and foremost, I REJECT the premise that it is inevitable or desirable for the population of the State of Colorado to increase by 2 million people by year 2050. An economic model based on continuous population expansion in the face of limited resources – specifically, water – at a time when human-induced climate change will likely cause reduced water supplies compared to the present, is neither realistic nor sustainable.

Moreover, such a massive increase in population over present levels (~50%) will incur severe environmental costs: in pollution, sprawl, urban-suburban development of wildland and rural areas, and potential large-scale infrastructure projects including water storage and transport. These environmental costs will directly and negatively impact on the quality of life of the residents of this State, to the point that the unique appeal of Colorado as a place to live and do business may be irreversibly degraded or lost. Before developing a "plan" for increased water consumption that is based on promoting continuous population expansion, Colorado first needs to have an open debate and formulate a realistic plan for managed population growth that reflects the voice of all stakeholders, not just the business community.

That said, the first priority of planning water use going forward should be to establish benchmarks of instream flows for each drainage in the state sufficient to maintain environmental quality that preserves or improves the existing biodiversity. The "learn as you go" mechanisms of ongoing study and adaptive water usage that were incorporated in the recent Colorado River firming project in collaboration with Denver Water can serve as a model for such provisions to allow flexibility depending on future conditions.

The second priority should be conservation by all existing users, including agriculture that currently accounts for >80% water usage in the State. This program should be codified into quantitative targets for reduced water usage, with penalties for non-compliance.

The third priority should be a requirement that before approval every proposal for new development—business, agricultural, residential—should formally document projected water needs, and the available water supply to meet those needs.

Thank you for your efforts to formulate the Colorado Water Plan, and for the opportunity to provide constructive criticisms.

Sincerely,

Robert Dale Brown
1328 Vine St
Denver, CO 80206

PUBLIC INPUT ITEM 195

First Name: celia
Last Name: Greenman
Affiliation:
Email: celia.greenman@earthlink.net
Phone (Example: 000-000-0000): 303-274-8768
Cell Phone (Example: 000-000-0000):
River Basin: Metro
Constituent Group: Environment and Recreation
Comments to be considered in Colorado's Water Plan:
Comments on Water Plan

- The CWP2 is on the right track with the intent to integrate land use planning with water planning and also setting a reasonable urban conservation goal of saving 400,000 acre-feet of water by 2050, which equates to nearly 1% per year water use reduction in our cities and towns.
- The plan emphasizes the importance of healthy rivers and streams in Colorado and acknowledges that $2-3 billion is needed to protect them.
- The plan discusses the need to improve Colorado Water Law to encourage efficiency, conservation, and reuse.

Topics to expand, clarify.

1. First off, the plan should provide for studies of what is needed to maintain healthy rivers, which would include flows that change in timing, frequency, duration, and amount over a single year. We need to know what a river needs and when it needs it. This information should be gathered first, then we can fill in the gaps with conservation, reuse, recycling, and efficiency, before we even talk about new storage. Non-consumptive needs should be quantified and funded.

2. Storage is not equal to yield. That is, you can build all the buckets you want but that doesn't guarantee that they will fill, what with climate change/drought/senior water rights. Regarding yield, the water plan should use the safe or firm yield, rather than average yield. Safe or firm yield is defined as the amount of water a project can deliver consistently, year after year, despite drought.

3. I oppose TMD from the western slope. I do not see how this would benefit the western slope, and it would be destructive to environmental and recreational needs.
4. In chapter 6, p. 106, there is discussion of scenario planning and adaptive strategies. With the adaptive management approach, if a river system is seen to be deteriorating, it should be clear that there will be the will to adjust M&I needs to help the river.
5. Regarding energy and water: a) Can water for fracking be recycled water, which would save water? The oil and gas industry and the COGCC should be brought into this discussion, but it also would be a savings for industry. b) for the Yampa, Green River, White River Basin, oil shale should be eliminated from the discussion. Today's fracking technology has turned the equation from oil shale to shale oil, with a significant energy saving in bringing the resource to market, and an increasing increase in water conservation. c) drilling activities and production facilities should take place at an increased distance from waterways to prevent spills from contaminating waterways. Again, the COGCC needs to be brought into this discussion.

PUBLIC INPUT ITEM 196

CLEAN WATER ACTION

August 19, 2015

Dear Director Eklund,

Thank you for taking the time over the last year to listen to the concerns of Coloradans across the state. As you enter this final month of public comments on the State Water Plan, we respectfully submit the attached 700 individual comments from concerned citizens around the state.

At Clean Water Action, we are committed to ensuring that all Americans have access to fishable, swimmable, drinkable water. In Colorado, that means we need to plan carefully for the future of Colorado's water supply as well as being diligent about water quality in our state. We know that water is the lifeblood of our state, and that every Coloradan depends on water for their lives, their livelihoods, and their quality of life.

At Clean Water Action, strongly encourage a plan that prioritizes urban, suburban, and rural water conservation. We want a plan that proactively works to keep our rivers healthy and flowing; and we are opposed to projects that expand or create new transmountain diversions. The enclosed letters reflect the same sentiment.

Again, thank you for your time and effort in this important plan.

Sincerely,

Sara Lu

655 Broadway, Suite 825, Denver, CO 80203 | p: (303) 405-6755 f: (303) 405-6754 | e: cocwa@cleanwater.org
www.cleanwateraction.org

The following quotes represent the best of the letters we have collected.

"We are raising our kids here, and are trying to instill in them a value for ecological awareness in today's world. Water is one of our state's most precious resources! Please create a plan that will keep Colorado's rivers healthy. Let's avoid expanding or building transmountain diversion projects." – Sara Weyley, Denver

"I am deeply concerned with the allocation and use of the surface waters in this state. Many other states in the Western US are currently experiencing record droughts that could have been avoided through proper planning and foresight…I urge you to seek a plan that maintains environmental flows in these rivers, as well as providing water for residents and agriculture." – Michael Gieschen, Ft. Collins

"We wanted to give our kids a better quality of life, and I think you would agree that water is our most important surface resource. Keeping our CO rivers healthy is essential in maintaining a #1 quality of life that we have been blessed with!" – Dr. Sherri Beck, Evergreen

"We need to protect our rivers, streams, and watersheds. I've spent countless hours in the backcountry. I can't imagine a world where people don't have the privilege to experience the beauty of Colorado." – Michael Richard, Golden

"Whether we are walking along a beautiful creek or tubing down a river, we are always doing something water related, and it is important to keep it that way. It's not only important to plan for our future, but also for the future of our kids." – Makayla Wolfe and Charlotte Ingold, Lyons

"I am an economist who has a different perspective on this issue. Water and its protection are one of the best investments we as a society can make. Any dollar or hour you spend on its protection NOW will have a manifold payoff in the future." – Andrew Friedson, PhD, Denver

"I have been hiking and camping in Colorado for my entire life…I urge that the Colorado Water plan have a huge emphasis on water conservation in such a way that individuals never have to fear losing their water or paying large bills while massive industries use and pollute water sources. I also feel strongly that farmers should be rewarded, not punished for modernizing their practices and saving water." – Alex Goetz, Lakewood

"I am dismayed by the drawdown of the Colorado River basin at a rate that cannot be sustained. Quite simply, the state needs a more aggressive plan for managing this all important resource." – Terry Loewenberg, Erie

"As you consider options for the State Water Plan, please prioritize conservation and efficiency and avoid any project that would expand or build new transmountain diversion projects. As a mountain resident, I've seen how such diversion projects hurt local communities as well as the animal and plant life that makes our state such a treasure." – Sonya Yeager-Meeks, Bailey

"Keeping Colorado rivers healthy is important to me and my 7-year old son because we value the beauty and benefits of the water sources around us personally, recreationally, and ecologically." – Julie Thomas, Boulder

PUBLIC INPUT ITEM 197

HIGH COUNTRY CONSERVATION ADVOCATES

P.O. Box 1066 • Crested Butte, CO 81224
970.349.7104 • office@hccacb.org • www.hccacb.org

September 16, 2015

Re: Public Comment on the Second Draft Colorado Water Plan

Dear Colorado Water Conservation Board:

Please accept these comments submitted on behalf of High Country Conservation Advocates regarding the second draft Colorado Water Plan (referred to herein as "CWP").

I. Introduction

High Country Conservation Advocates (HCCA) is submitting these comments to aid the Colorado Water Conservation Board (CWCB) as it finalizes the Colorado Water Plan. HCCA's mission is to protect the health and natural beauty of the land, rivers, and wildlife in and around Gunnison County. Many of our members live and work here and enjoy recreational opportunities and a quality of life that is preserved by our valley's wildlife, habitat, and water resources.

The current CWP reflects a careful consideration of Colorado's water values and creates a path forward that embraces these values. To that end, we support many of the goals and strategies represented therein. HCCA is pleased to see that the CWCB has heeded public input and has adopted common-sense goals for water conservation. We support the proposed framework for assessing new trans-mountain diversions but urge the CWCB to apply that framework in a manner that truly protects basin of origin environmental needs. The CWP encourages the development of stream management plans that could create comprehensive, location-specific river management plans. All of these elements indicate that the CWCB is headed in the right direction.

We offer the comments below to suggest how environmental values can be strengthened in the final CWP.

II. The CWCB Should Commit To Funding Environmental Projects In A Concrete Manner

The CWCB should identify and commit additional sources of funding for environmental needs. One of the environmental values articulated in the Governor's executive order is to maintain "a strong environment that includes healthy watersheds, rivers and streams, and wildlife" (CWP 3). The CWP repeatedly emphasizes the importance of healthy rivers and streams and discusses promising strategies to maintain the health of riparian and aquatic ecosystems. These strategies are only meaningful with sufficient funding for implementation- namely the $2-3 billion that has been identified as necessary to protect our stream ecosystems.

Recreational use and the environment are major economic drivers in Colorado and important for our quality of life. However, these benefits are not often represented when we assess economic values associated with water. Environmental needs are underfunded and at a disadvantage because they are not eligible for the same type of loans as other infrastructure projects. As described in the CWP:

> There are currently limited funding sources available for education, outreach, environmental resources, recreation, and other important water-related activities that do not involve construction or projects. Though these efforts have strong support from non-governmental organizations, they are typically funded through charitable donations, as opposed to tax revenue. Additionally, much of this type of work has been funded through the WSRA program, which requires approval by basin roundtables and the CWCB. Therefore, it may be necessary to identify additional funding sources to fully meet the environmental and recreational water needs in the state (CWP 335).

Environmental projects primarily rely on grants for financial support since those projects are not typically ratepayer supported (CWP 336). The CWP suggests that the state continue to "[w]ork collaboratively with foundations and nonprofits to support the environment, recreation, and education priorities through philanthropy (CWP 344). While philanthropy does provide an important source of funding for environmental projects, environmental priorities should be funded in the same manner as other state priorities. The CWP points to potential legislation and options to meet these funding needs but does not go far enough.

More funding should be earmarked for environmental needs. We request that the final plan make a strong commitment to provide at least $1 million annually to support stream management and watershed plans. We suggest that the CWCB extend instream flow tax credits for water rights donations to the instream flow program beyond 2015 (CWP 337) and urge the CWCB to focus on the most promising additional funding sources for other environmental needs, such as green bonds (CWP 339).

III. Conservation And Reuse

Conservation is a low-risk investment that will free up supplies in the face of increasing demand and climate change uncertainty. HCCA supports many of the water conservation strategies discussed in the CWP. We would like to encourage the CWCB to take the next step in furthering water conservation in Colorado by setting specific goals for the following strategies:

- Support municipalities interested in creating local water smart ordinances
- Develop incentives for water providers to adopt inclining block rate structures
- Incentivize entities that are not considered "covered entities" to engage in water conservation planning[1]
- Encourage the Water Quality Control Division to develop standards under Regulation 86 for the reuse of graywater
- Promote specific programs that encourage drought tolerant vegetation and discourage lawn irrigation
- Foster the development of regional water conservation plans by designating specific funding sources.

We encourage the CWCB to explore the suggestions above in greater detail and encourage the incorporation of the specific amendments discussed below.

The Final CWP should adopt a "high" water conservation goal. As noted above, the CWP takes a step in the right direction by adopting an urban conservation goal to save 400,000 acre-feet of water by 2050. However, comments submitted by the public urge the CWCB to adopt a 'high' water conservation goal by 2020 goal, equivalent to saving 460,000 acre-feet by 2050. The final draft should adopt this high water conservation goal.

[1] C.R.S. 37-60-126 requires that those entities that deliver 2,000 acre-feet of water annually are required to have a CWCB approved conservation plan.

The final CWP should commit to additional funding for urban conservation and reuse. We support the strong conservation commitments expressed in the CWP and urge the CWCB to adopt concrete funding mechanisms to ensure that these commitments can be seen to fruition. We agree with the statement in the CWP that "if water conservation is to be part of Colorado's future water supply portfolio, it must be supported and funded like other supply initiatives" (CWP 82).[2] The CWCB should identify and commit to additional sources of funding for urban conservation.[3]

Municipalities and individuals should be provided with additional grant funding opportunities for urban conservation projects and additional discussion of how grant and loan opportunities for municipal conservation can be effectively paired with other demand management strategies.

The final plan should adopt strong reuse polices and incentives. HCCA supports the development of a statewide reuse goal and suggests that the final plan adopt the stance put forth by the Gunnison Basin that "[e]ntities must first reuse all legally available reusable water supplies to the maximum extent possible before further development of Colorado River System water" (CWP 178).

IV. Potential Climate Change Impacts Should Be Considered When Contemplating Instream Flow Protections, Environmental Assessments, And Stream Management Plans

Climate considerations should be included in stream management plans. As noted in the CWP, "[t]he purpose of a SMP is to provide the framework for maintaining healthy stream systems while also protecting local water uses and planning for future consumptive and non-consumptive water needs" (CWP 143). Part of considering future environmental needs is considering these needs in light of potential climate impacts.

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[2] To that end, we support the timeline proposed in the Plan discussing that the DNR will work with the General Assembly over the next two legislative cycles to fund the Water Efficiency Grant Program consistently at $2,000,000 million per year.

[3] We support the ask in Section 6.3 for a significant increase in the funding available through the Water Efficiency Grant Program. Similarly, we support the Critical Action I.a.1, calling for the expansion of the CWCB's loaning ability to include conservation actions.

The CWP includes important information on how climate change impacts could potentially affect water resources, noting that "climate change and associated impacts make it more difficult to meet Colorado's future water needs because of diminishing supplies, increased demand for water, and potential big swings in precipitation patterns and amounts in the future" (CWP 4). Indeed, the CWP notes that one of the big water supply challenges facing Colorado is addressing water quality, watershed health, and ecosystem resilience in light of water demands and a changing climate and explains that "if temperatures continue to increase, the range of suitable habitat for cold-water fish species is expected to diminish" (CWP 4; 90). Thus, stream management plans should consider how potential climate impacts will affect water availability and the needs of aquatic ecosystems.

Potential climate change impacts should be also considered when assessing instream flow protections. Many of the impacts discussed above and in Table 4-1 could impact the flow timing and quantity needs of aquatic ecosystems. Decreasing runoff, earlier peak runoff and lower late-summer flows, warming temperatures and changes in streamflow timing and quality could directly affect how effective existing legal and management protections are for riparian ecosystems. Potential changes in the hydrologic cycle should be considered when structuring seasonal flow protections. Attention should be paid to times when fisheries need particular conditions for spawning or when riparian areas have specific flow needs.[4]

V. The Final CWP Should Take A Holistic Approach to Stream Management Planning And Environmental Assessments

HCCA is pleased to see that the CWP supports stream management planning and environmental assessments and the protection of instream flows. We urge the CWCB to consider a final draft that considers all stream reaches within a given watershed (as opposed to focusing on only those reaches previously identified as home to endangered/imperiled species, as SWISI "focus areas", or as targeted segments in basin implementation plans) and one that incorporates anticipated climate impacts when considering ecosystem needs (for instance, when

[4] We also agree with the plan that "planned projects and methods should incorporate the potential stressors of drought and climate change, including decreased supply and changes in runoff timing" (CWP 243). This analysis should be incorporated into the review of projects eligible for WSRA funding.

contemplating important fisheries habitat, consider high cold-water tributaries as future climate refuges).

Stream management plans and environmental analysis should consider reaches not previously identified for their unique environmental values. Focus reaches should not be limited to those identifies in a SWISI analysis or in basin implementation plans. A holistic approach involves considering all components of a watershed, including small tributaries which may not yet have been identified in a SWISI assessment or basin implementation plan.

Though the reaches identified in SWISI and by the roundtables provide some direction and initial information for environmental analysis, certain reaches have been overlooked in those initial efforts.[5] Small but important tributary reaches may be crucial habitat for important species sub-populations and may serve as important refuges for cutthroat. As the CWCB and the roundtables consider how to move forward with stream management plans and environmental assessments, we ask that all reaches are considered.

Habitat protections should not only be applied to reaches with threatened, endangered, or imperiled species. While it is essential to protect the habitat of species that are already vulnerable, it is also necessary to protect ecosystems as a whole to enhance ecosystem resiliency. A resilience-based approach will protect potential climate refuges and will preserve habitat for a range of species.

Projects identified in stream management plans and environmental assessments should be given the same priority as those IPPs already identified. Many roundtables identified projects to conduct assessments to address environmental and recreational information gaps. Once environmental assessment and stream management plans are conducted, we suggest that the projects identified as priorities during completion of these efforts be given the same priority as those identified in earlier drafts of basin implementation plans.

[5] The SWISI assessments have been valuable in beginning to identify "focus areas" selected for the presence of imperiled fish species, outstanding riparian habitat, and use as boating and fishing areas (CWP 88). However, when comparing the SWISI analysis with our local tributaries, there are notable areas that have been left out of initial assessments. Roundtables have also identified reaches of importance. However, as the CWP states, the work of the roundtables was "not meant to include every stream with important attributes in every basin" (CWP 89).

VI. The Final CWP Should Provide Additional Support For Alternative Water Transfer Mechanisms

To protect Colorado's farming and ranching heritage from buy and dry, the final plan needs to include additional incentives to improve agricultural efficiency and infrastructure while fostering compensated sharing agreements. A primary goal of the CWP is to increase or maintain the amount of agricultural production supported by Colorado's ranching and farming communities. One strategy used to avoid agricultural buy and dry is through supporting "alternative water transfer mechanisms" or "ATMs". The plan establishes a goal of 50,000 acre-feet of water supplied by ATMs in the next ten years. Ultimately, this strategy seeks to shift current trends of buy-and-dry of agricultural water rights towards greater irrigation efficiency and flexible ways to share water with cities and streams. HCCA fully supports this strategy and offers the following suggestions for how to further support the development of ATMs.

The final plan should consider a range of ATMs to determine the most promising methods for avoiding agricultural buy and dry. We support many of the suggestions in the CWP and encourage the CWCB to explore these options in greater detail in the final draft. Strategies to expand upon include:

- Short or long-term temporary water transfer alternatives such as rotational fallowing, interruptible supply agreements, water banks based on deficit irrigation, or fallowing for a specific period of time;
- Support research into the benefit and challenges of temporary rotational "idling" of crops, deficit irrigation, and split season irrigation; and
- Investigating agricultural mechanisms, including soil health improvements and drip irrigation and mulching.

Additional emphasis should be put on efforts to streamline transactional burdens associated with ATMs. The CWP discusses "unacceptable" outcomes for Colorado's water future. One unacceptable outcome is "transactional costs that prohibit efficient and effective water sharing." Currently, alternative agricultural practices are more expensive than buy and dry and are legally burdensome (CWP 209). If the state is serious about avoiding the permanent fallowing of agricultural lands to provide for future municipal growth, additional efforts need to be invested in eliminating legal, transactional, and financial barriers to ATMs.

Investigate legal fixes to better enable temporary agricultural water sharing. Once ATM pilot projects have been implemented, the CWCB should consider making policies that have been successfully tried and tested

permanent. Several pilot projects are currently exploring the effectiveness of particular ATMs. For instance, Colorado House Bill 13-1248 authorized a fallowing-leasing pilot program to test fallowing-leasing as an alternative to permanent dry-up (CWP 213). SB 15-198 expanded this effort to include temporary transfers from agriculture to the environment and recreation. Once sufficiently vetted, if proven to be effective, legislation should be promoted to offer permanent solutions based on successful pilot projects.

The CWP should support studies to assess the proper pricing of agricultural water leased for municipal or environmental uses and assessing the impacts of leasing on long-term agricultural production. The CWP acknowledges that "[w]e need to assess fair and effective pricing for farmers and water suppliers" (CWP 210). Additionally, the plan includes a goal to assess quantitative information related to agricultural dry-up in SWISI 2016, including lessons learned and monitoring the effects of ATMs in reducing permanent agricultural dry-up (CWP 217). Concerns about how water will be priced for these transactions and how temporary fallowing will negatively impact adjacent lands have been raised repeatedly at Gunnison Basin roundtable meetings. These questions need to be addressed in a meaningful manner for more irrigators to participate in pilot and long-term ATM programs.

VII. Section 7.3 Should Include Broad Direction that Negative Water Quality Impacts From Mining and Mining-Related Activities Be Meaningfully Addressed

HCCA strongly supports the quality and quantity integration goal that was developed in CWP Section 7.3,

> **Recognizing the inter-relationship between quality and quantity, strategies designed to meet Colorado's current and future consumptive, recreational and environmental water needs will incorporate, as a key objective, the protection and restoration of water quality.** CWP 298 (emphasis in original).[6]

The incorporation of the Colorado Water Quality Control Act (CWQCA) to inform section 7.3 provides unity and further support of CWQCA's legislative declaration to achieve, among other things, the maximum practical degree of water quality in the waters of the state by providing that no pollutant be

[6] The CWP rightly refers to Executive Order D 2013-005 to note that "'Colorado's water quantity and quality questions can no longer be thought of separately. Each impacts the other and our state water policy should address them conjunctively'" (CWP 292).

released into any state waters without first receiving treatment or other corrective action necessary to reasonably protect the legitimate and beneficial uses of such waters. As the CWP currently stands, we believe is has a solid framework for identifying and resolving water quality problems.

The CWCB has an opportunity to further bolster this objective and harmonize Executive Order D 2013-005 and the WQCA by specifically identifying water quality pollution caused by mining and mining-related activities as a water quality problem that must be addressed through specific actions. HCCA recommends that this be done by adding an additional step to those listed on draft page 298-99, a step calling for the meaningful remediation of the negative impacts on water quality that mining activities have had on both surface and ground water resources. Adding this step identifies a significant cause of water quality problems across the state and further refines the objective of protecting and restoring water quality.

Mining and mining-related activities have had numerous impacts to our water quality. In addition to acid mine drainage, impacts to water quality and quantity have included disruptions to the hydrological balance, sedimentation, temperature changes, tailings discharges, infiltration, dewatering of pits, and injection disposal. Another particularly significant water quality concern is the development of mine pools at mine sites.

Although collectively we have taken significant measures to address water quality problems caused by mining since the Summitville Mine disaster in 1992, the Gold King Mine spill of over 3 million gallons of acid mine drainage into the Animas River was a reminder that we have still not fully addressed these impacts. The Division of Reclamation and Mining Safety has noted there are 150 mines that have serious discharging problems that need to be addressed. Yet, no efforts to capture and treat contaminated water from these mines are in place to rectify this pollution. This is a significant problem and a continual threat to our Colorado's water quality.

Language should be incorporated into the final CWP to address a broad range of water quality issues resulting from historic and current mining operations. The CWCB should also call for addressing a systemic problem for Colorado communities with a mining history: the lack of financial assurances to guarantee that water treatment for acid mine drainage will continue without interruption.[7]

[7] A stark example of a continued problem many communities share with Crested Butte is the need for perpetual water treatment and financial assurance (or bonding) to guarantee operations will continue without interruption and that necessary upgrades and maintenance will be covered. In many

When addressing this issue, consideration should be given to including the costs of catastrophic failures or accidents so that communities, vibrant post-mining economies, and ecosystems are provided with the protection that they need to combat the negative water quality impacts of mining.

In Crested Butte, these issues are of great concern- upstream in our town's municipal watershed is a processed water treatment plant that operates continuously to treat acid mine drainage from an inactive mine site. Contaminated water leaks out of an adit and requires treatment that costs nearly $2 million a year before it can be discharged into Coal Creek, a stream that runs through the heart of Crested Butte. For over a decade HCCA, the County, and the Town have sought a bond that guarantees uninterrupted operation of this water treatment plant and the costs of necessary upgrades and maintenance. Yet, there is still no financial assurance (or bond) in place guaranteeing this plant will run without interruption.

Our community members have signed a letter asking that the CWCB address these issues in the final CWP. This letter and these signatures are attached below.

Accordingly, we strongly encourage that the final CWP state the need to proactively address and prioritize water quality issues stemming from mining and mining-related activities. The final CWP needs to provide a broad umbrella for proactive, protective, and effective measures that will safeguard and improve water quality from the negative impacts of acid mine drainage and other mining-related pollution. Because this lack of funding for water treatment is an issue that spans many communities, this discussion should address the need to bond for the perpetual operation, maintenance, and upgrades of water treatment plants that treat acid mine drainage. A statement speaking to this need fits well within section 7.3, which also notes relevant state agencies that address these issues, including the Water Quality Control Division, The Division of Reclamation, Mining and Safety, and the Colorado Department of Public Health and Environment – Hazardous Materials Waste Management Division.

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instances, perpetual water treatment is required to safeguard water resources from acid mine drainage and other mining related water pollution. Yet, despite the necessity of such plants, the costs of operating and upgrading these facilities is not insured by bond or other measures that would guarantee operation as long as the plant is needed. The consequence is that when accidents happen or where the water treatment plant is does not continue to operate (for any number of reasons), the public, our vibrant post-mining local economies, the State, and freshwater ecosystems pay the cost.

For too long we have skirted this issue at significant cost to our communities, local economies, environment, and water quality. We hope the CWCB will take this unique opportunity to include as one of the steps to achieve the objective of protection and restoration of water quality meaningful measures that address the legacy of acid mine drainage and so that events like the Gold King Mine spill will be events of the past.

VIII. Moving Forward, Critical Actions In Chapter 10 Should Be Prioritized And Broad Public Participation Should Be Continued

The CWCB should consider whether the action items discussed in Chapter 10 have realistic timelines. The timeline for implementation of "critical actions" suggested in Chapter 10 is ambitious. Many actions may be difficult to implement in a meaningful manner within the current timelines.[8] Although responsibility for completing these tasks is shared amongst a handful of entities, the long list of "near-term" actions- actions to be completed within three years- presents a formidable undertaking.[9] Furthermore, many near-term actions should build on previously completed efforts, rendering the suggested timeline even more challenging. The CWCB could focus on the most promising and pressing action items for the near-term.

Thus far, the draft CWP has been shaped by robust public participation; once a final draft is created, the CWCB should ensure that the implementation process remains inclusive. Many of the paths forward discussed in the CWP require public participation. The successful implementation of pilot projects, crafting of legislation, and further development of objectives will continue to depend on broad public support.

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[8] Where numerous potential avenues for funding are listed, the most promising options could be investigated first. Action item 1 under "Facilitate Alternative Transfer Methods" is to explore opportunities to create more flexibility for various types of water transfers (CWP 398). As ATM pilot projects are investigated and assessed, new barriers may be identified along with new options to reduce transaction costs. Furthermore, the action of "organiz[ing] and conduct regional workshops with partners or co-sponsors to share lessons learned on actual ATM projects, and to garner additional interest in the pilot project by discussing benefits" is best completed after pilot projects have been tested (CWP 398). The noted entities are unlikely to satisfactorily complete these tasks in a three year period.

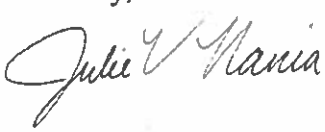
[9] For instance, in 10.3.I.c "Explore New Funding Opportunities", 6 out of the 7 options are noted as "near-term" options.

IX. Conclusion

We appreciate the effort the CWCB has invested in the CWP. We encourage the CWCB to consider the above comments when creating the final draft.

Thank you for this opportunity to comment.

Sincerely,



Julie V. Nania
Water Director
High Country Conservation Advocates
julie@hccacb.org

Dear Colorado Water Conservation Board and Governor Hickenlooper:

As a resident and/or visitor who cares about the water quantity *and* quality in the headwaters of the Gunnison River, I am deeply concerned about the impacts that mining has had on our precious water resources. In Crested Butte, our water quality relies on the operation of a water treatment to treat acid mine drainage that would otherwise run into Coal Creek, Crested Butte's drinking water source.

Often perpetual water treatment is required to address pollution caused by mining and mining-related activities. Treatment often requires the construction of expensive water treatment plants and costs millions of dollars per year to operate those plants. Yet, these facilities are not covered by a financial assurance or bond to guarantee that the cost of operation, maintenance, and upgrades are provided for.

Communities, vibrant post-mining economies, and ecosystems should not have to bear the costs of pollution caused by mining activities.

Today I ask that you consider adding to the Colorado Water Plan a broad statement that water quality pollution due to mining and mining related activities will be proactively addressed and that the current lack of adequate financial assurances for water treatment will be remedied.

Printed Name	Signature	Address	Phone/E-mail
1. Lanell Denton		159 E/ New Berlin St Helena TX 78152	210 378 9909 lfdenton53@gmail.com
2. Cindy Denton		1594 E New Berlin St Helena TX	denton4ace@aol.com
3. Sue Neary		Box 432 CB CO	sueneary2@msn.com
4. Jason Rojven		Box 2794 CB CO	22yyzzyy12 c...com
5. Patrick Powell		2223 Roanoke Colorado Springs	ptnpowell@msn.com
6. Shawn Hood	Shawn E Hood	2482 payne cw CS CO 80916	School5lew@gmail.com
7. Deven Perschke		23 Treasury Rd CB, Co.	RoanFe@msn.com
8. Linette Weis-Perschke		23 Treasury Rd CB, CO	roanfe@msn.com
9. James A Michael	JAMES A MICHAEL	108 1/2 Tracy CB CO PO Box 877	JMichael@167AM.com

Printed Name	Signature	Address	Phone/E-mail
10. Moss Wagner		PO 2936 EG CO 81227	3496208
11. Jacob Shaw		~~628 Tuttle Ave Crested Butte~~ 11500 County Rd 7A	970 459 0612
12. Linda Wacht		5100 S Jellison #D Littleton, CO 80123	303-653-1857
13. David Rose		PO Box 783 Crested Butte	
14. Terry Foley		P.O. Box 1721 Crested Butte	970 349 7757
15. Craig Weber		40 Marcellina Ln 15 CB CO	6026203497
16. [illegible]		CB	
17. Lucius Welch		CB	
18. Phoebe Clift		PO Box 4217	
19. Patrick Myall		1128 Church St SF CA 94114	
20. Megan Myall		"	
21. Gary Dotzler		po Box 2373 CB, CO 81224	(970) 642 3733
22. Natalie Merrisa		Box 1745 CB, CO 81224	970/209-0410
23. Linda Conway		17567 Cabin Hill Ln Colo. Spgs, CO 80908	
24. Judy Harris		40 Marcellina Ln #15 MT CB 81225	CO 1-334-7584
25. W. A. Kaiser		1247 E Eagle AVE	801-913-4910
26. Bernadette Mayhew		1247 E Eagle PW, A 85020	801 631 7366
27. [illegible]	Leigh Murray	42 Spafford Plattsb. NY 12901	572-9111
28. Alex Mundy		Po Box 291	497-9511
29. Jenni Dixon	Jeni Dixon	7875 Violet Ct Arvada, CO	303 587-0263

Printed Name	Signature	Address	Phone/E-mail
30. Allen Dixon	Allen Dixon	7875 Violet CT Arvada Co 80007	303 995 3482 allendixon@aol.com
31. Corlyn Lucks	Corlyn Lucks	P.O. 144 CB	970 306 9920
32. John Dean		P.O. 1800	C
33. David Auer		PO 69 81224	
34. NATASHA VAZ		6967 Carr Ct. Arvada, CO 80004	720-841-8493 natke@mac.com
35. Lucille Swan		PO 2101 CB CO 81224	lucco@rmi.net
36. Sue Williamson		33 Gillaspie Ave Crested Butte CO	bewell310@yahoo.com
37. Tim Williamson		33 Gillaspie Crested Butte Co	timwill.pt@gmail.com
38. Anita Puglisi	ANITA PUGLISI	P.O. BOX 5471 MT CB, CO	puglianita@yahoo.com
39. Bob Puglisi	Bob Puglisi	"	nmbob2006@yahoo.com
40. Jackson Pettu		P.O. BOX 1571, 81224	jacksonpettu@gmail.com
41. BEREK NOVAK		305 Escalante St. CB. 81224	redrockaz@yahoo.com
42. Steve Norris		620 DTC PKWY	
44. Phil Schroeder		5500 DTC PKWY	phlschrdr@gmail.com
45. HARVEY CASTRO		POB 2720 CB/CO 81224	
46. Molly Murfee		POB 1047 Crested Butte, CO 81224	970-349-0947 mmurfee.aei@usa.net
47. Kelly Chronister		Gunnison, Colo 1550 CR 44C	970-641-6434
48. Deborah Tutraver		PO BOX 1664 Crested Butte, CO 81224	dtutnauer@yahoo.com
49. Jill MacDuffie		Box 1960 Arboles, Co	
50. Lydia Stern		PO Box #1214 Crested Butte, CO 81224	lsternmedia@gmail.com

Printed Name	Signature	Address	Phone/E-mail
51. Mel Tennz		PO Box 2547 Crested Butte, CO	(203)984-0926
52. Larry Mosher		Box 2535 Crested Butte	970-349-2126
53. Kevin Chedd		2450 Highway 135 #5 Gunn	970-596-4506
54. Tania Cowdan		PO Box 1852 Vail CO 81658	303 250 7127
55. Walter Kay		840 Dahlia St. Denver, CO 80220	860-657-7571
56. Natalie Tredann		840 Dahlia St Denver CO 80220	" "
57. Karen Lizzi		20 Hunter Hill Rd Mt Crested Butt, CO	Kmlizzi@gmail.com 720-940-5684
58. Max Rebich		117 Shamrock Dr #206	970-497-0878
59. Leslie Lorkler		15624 Hwy 1x Almont CO 81210	970 642 0940
60. Eric Pittman		401 Village Lawrenceburg Ky	859-339-9414
61. Sandra Moore		55 Barber Pl Crested Butte Co	970 349-7290
62. Rita Payne		P.O 722 CB, CO	970-209-3683
63. Susan Gellert		PO Box 71 CB CO 81224	970.349.2786
64. Pat Hellen		3936 Dale Lafayette Co 80026	
65. Sharon Farrington		P.O 1699 126 Eckert Crested Butte	9702751309 CO 81224
66. Jessica Noonan		15995 W Ellsworth Pl Golden Co 80401	303-278-8572
67. Tanya Horning		1054 S Cook St Denver, CO 80209	
68. Susan Robertson		469 S York St Denver Co 80209	
69. Nora Adam		pob 423	(970) 349-5913
70. Shelby Katz		3124 Eastwood Ct Boulder CO	7203203000

Petition to CWCB and Governor Hickenlooper
Re: Addressing water quality pollution due to mining and mining related activities in Colorado's Water Plan
September 2015

Printed Name	Signature	Address	Phone/E-mail
71. John meyer		124 Maroon Ave CB, CO 81224	jackmeyer@gmail.com
72. Tilly Carriker		207 Sopris CB, CO	carrikert@gmail.com
73. LAUREN HETTICH		226 GLENWOOD TRL GOLDSBORO, NC 27534	hettichlaurenb@gmail.com
74. THEO ELLIS		226 GLENWOOD GOLDSBORO, NC 27534	ELLISTHEO@HOTMAIL.COM
75. Daniel Oliver		3 Castle Rd unit 19 Mt. Crested Butte, CO	WildRaccoon@aol.com
76. Isabel Casselman			Isabel.Casselman@gmail.com
77. Reeves Hewlett			Alpine Reeves26@gmail.com
78. Jack Hughes		POB 140 CB CO 81224	349-6550
79. Dana Albright		1881 Clark Ct Erie, CO 80516	303-881-4865
80. MIKE COX		WARSAW, IN 1305 E ISLAND VIEW DR	574-453-1526
81. HANNAH TRIM		1930 HWY 300 LEADVILLE, CO 80461	(708) 285-3292
82. MATT ZAN		1930 HWY 300 LEADVILLE, CO 80461	603-502-7224
83. Brie Aljets		PO Box 2210 Crested Butte, CO	baljets@gmail.com
84. Gordon E. Demerson Jr.		Box 3764 Crested Butte CO.	ddemerson@roadrunner.com
85. Bryan Lyerly		20 Hunter Hill Rd. Mt. C.B. CO	blyerly@ballsotheist
86. Maria Fenerty		504 Red Lady CB CO 81224	heartandsol@yahoo.com
87. Natalie Berkman		322 N. Taylor St. Gunnison CO	nberkman@gmail.com
88. KARL WOLF		12018 EDGEMERE CIR. RESTON VA 20190	KFWOLF2@icloud.com
89. Nancy Burrell		Oakton VA 2707 E. Ridge Ct 22124	nhburrell@aol.com
90. Stephanie White		POB 1431 CB CO 81224	steph.tw.white@gmail.com

Printed Name	Signature	Address	Phone/E-mail
91. Alexandra McFarland		PO BOX 26330 CB, CO, 81224	970/497/6884 alexandra.1490@gmail
92. JOAN Winton		P.O. BOX 835 CB 81224	805-886-6691
93. JIM Arneson		P.O BOX CB 835 CO 81224	Joan_Arneson @icloud.com
94. CORKY Lucks		PO Box 144	billncorky@msn.com
95. Jason Moore		1150 Schiery St	hoosiersm317@gmail.com
96. Dana Sperry		3707 Winona Ct Denver CO 80212	DSperry.or@gmail.com
97. Christine Gonzalez		813 Sopris Ave PO Box 574 CB CO 81224	nestarose2@yahoo.com
98. Karen Wahrmund		PO Box 903 Carbondale, CO	kwahrmund@gmail.com
99. Jacob Weems		Box 553 Carbondale CO 81623	jacobweems79@gmail.com
100. BALLE GRIFFITH		BOX 2073 CRESTED BUTTE CO 81224	GRIFPROP@TCINK.COM
101. Beverly Griffith	Beverly Griffith	Box 2073 CO Created Butte	grifprop@texas.net
102. KATE ROLF		200 E. Bowman Av Woodland Pk, CO	KATEROLF@gmail.com
103. ROGER ROLF		SAME ↑	RROLF66@GMAIL.COM
104. JERRY DENERELL		314 SOPRIS CB BX 1056	JCDGRIT@GMAIL.COM
105 Donald E Tucker	DONALD E. TUCKER	P.O. Box 1772 C.B	
106. ARVIN RAMGARHIN		POB 311	arvinram451@gmail.com
107. Kim Palmer	KDPalmer	239 N. McKinley 80521 (Fo Co.)	Kpalmer@ftcollins.com
108. Raymond Bilyard	Raymond Bilyard	16244 Grange Road	
109. Kira Taylor		614 W. Gothic Gunnison	Kiradanielle taylor@gmail.com
110. VALERIE JAQUITH		123 Bettl CB CO	

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	Name	Signature	Address	Email/Phone
111	Haley Woods		P.O. Box 1905 C.B.	349-0366 hlw3oo@gmail.com
112	Rob Mahedy		PO Box 2401 Crested Butte CO	349-1321 robmahedy@yahoo.com
113	Autumn Clark	Autumn Clark	PO 2767 CB, CO	901-06[illegible] autumnmclark111@gmail.com
114	Art Weichart		39508 Pitkin Rd	773-294-1146
115	Ian Oster		4614 N Colo Mdw ST Gun	740-364-8735
116	Adina Oster		"	"
117	Connor Gipin		PO Box 908 CB CO 81224	Cgriff88@gmail.com
118	Curtis Martinez		Colorado Springs CO 2892 Baltimore Cir	
119	Elizabeth Stanbro		502 Crystal Hills Manitou CO 80829	
120	Anna Roberts		PO Box 271 CB CO 81224	
121	Sierra Fairfield Smith		PO Box 271 CB CO 81224	
122	Tasha Mills		5671 PO Box Frisco CO 80443	tasha.mills.25@gmail.com
123	Jenna Shuly		PO Box 1770 Frisco CO 80443	jennasheely@gmail.com
124	David McLaughlin		1540 Nichols Way Montrose CO 81401	
125	H Smith III		PO Box 1851 CB, CO 81224	
126	Ben Johnson		PO Box 7422	benjohnson78@gmail.com
127	Jody Coniglio		PO Box 2391	
128	Anna Cobb	Anna Cobb	PO Box 1558224	
129	Trudi Ford		278 Escalante Crested Butte	audaweave@gmail.com
130	MJ Simmons	MJ Simmons	PO Box 763 CB, CO 81224	mjwildyoga.wolf@gmail.com
131	Honey Bee Murray		PO Box 277, CB. 81224	
132	Paul Merck		PO Box 1272 CB 81224	
133	Toni Todd		PO Box 3056 Hwy 135 Gunnison, CO 81320	