



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 all 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 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