



**MARCH 2015 MEETING AGENDA**

RMWEA/RMSAWWA Joint Water Reuse Committee / WaterReuse Colorado

**March 5, 2015 at 1:00 pm**

**City of Aurora Municipal Center**

15151 E. Alameda Parkway, Aurora, CO

Lowry Room; 3<sup>rd</sup> Floor

Call in number 888-809-4012, Passcode 7641593#

**Attendees:**

Damian Higham	Denver Water
John Rehring	Carollo Engineers
Julie Tinetti	PCWRA
Bob Anastasov	Aurora Water
Laura Belanger	Western Resource Adv.
Richard Leger	Aurora Water

Bob Dye	Meridian Metro District
Sarah Craig	HDR
Abbey Antolovich	Honeywell
Dave Takeda	MSK Consulting
Phil Brandhuber	HDR

**Phone Participants:**

Frank Johns	TetraTech
John Whitley	WRF
Liz Lemonds	CDPHE

Donene Dillow	Colorado Springs Util.
Maureen Egan	CDPHE
Jodi Villa	Kennedy Jenks

**Note July Meeting Date Changed to July 9:** Location City of Aurora (Room TBD). At May WRCO meeting we will decide if we are shifting start time to 2 PM per agenda item 2 d below.

**1. CDPHE-WQCD Items**

- a. Regulation 84 Updates
  - i. Update on possible new uses effort/WQF workgroup (Damian) – No update
- b. Graywater Non-Traditional Uses Update (Damian) – Responsive prehearing statements were due 3/5, prehearing conference is scheduled for 3/23, rebuttal statements are due 4/1 and the hearing is on 4/13. Draft Regulation 86 refers to Regulation 84 in a few places, chiefly in that it limits graywater use to subsurface irrigation and toilet flushing which is similar to the initial Regulation 84. This can be expand w with increased knowledge and level of comfort. Damian noted that we should be sure to provide input that Regulation 84 can be cumbersome and shouldn't be referred to without acknowledging its shortcomings.
- c. New NOA format (Richard) – CDPHE has proposed a new Notice of Authorization (NOA) for treaters and users. Richard thought the draft documents were very informational and well developed. Damian noted they are splitting it into a structure more similar to the permit and that treaters don't need to do anything, it's just a new

format. Once CDPHE has completed the new NOAs, and they are getting close, they will send them out. They are developing thresholds for incidental discharge versus accidental spills. Liz noted that they are looking for input from treaters by Friday, March 13, 2015 on escalating tables where discharges based on volumes would have different reporting options, for example ranging from a log entry to a call into CDPHE. They would like to receive input from treaters on volumes, for example how much water does an average sprinkler break discharge? Part of driver is to alleviate pressure on spill lines and on users.

- d. Hydrostatic discharge changes (Damian) – The permit now covers oil and gas, drinking water operations, and recycled water. They are looking to split some things out, particularly on the oil and gas side and are considering if recycled water can be moved to an individual permit. On the drinking water side of things, it looks like there's some potential for an alternative permit. Maureen noted that they heard from some stakeholders that they'd prefer alternative permit coverage for potable water but CDPHE hasn't kicked off that process yet.
- e. Other Items - None

## 2. Subcommittee Updates

- a. Scholarships – 2015 WRCO Scholarship Announcement (Tanya) – No update
- b. Website (Steve) – No WRCO website update. Richard noted that the WasteReuse Association's website will be changing as part of combining WRA and WasteReuse Research Foundation (WRRF). WRA has changed their logo and will be working with each state section to revisit theirs. WRA is also developing a branding policy.
- c. Industrial Reuse Committee Webinars (Abbey) – There will be an April webinar (date TBD) with someone from Chevron talking about accessing municipal supplies in California for oil and gas. The Director of Sustainability from Coca Cola will also be speaking. They are looking into specific topics areas such as financial and economic issues associate with industrial reuse. If anyone has good examples please share them with Abbey. The Industrial conference was very good and they are hoping to make it an annual event.
- d. Annual Awards (Abbey) - Tara, Abbey and Laura had a call and decided to set May 15 as the due date for nominations each year. With that timing, nominations can then be pushed through to WRA for national awards also. The subcommittee agreed that award should be annual, there will be recognition (plaques and an event), and nominations must come from a WRCO member though the recipient doesn't need to be a member. WRCO meeting attendees agreed. Award categories will be similar to WRA's with a few CO specific modifications. There will be a maximum of six awards and a likely minimum of four. Initially the thought was to host an awards luncheon on same date as WRCO's July meeting, but after discussion an after work reception had more support (with the July WRCO meeting perhaps starting an hour later). Richard and John R volunteered to review award nominations. Anyone else who is interested in being on the review committee should contact Abbey. WRCO will need to purchase plaques and pay for the awards receptions. Abbey will get some cost estimates and will make a request for funding at the May WRCO meeting. We should also add awards plaques into the spending policy.

- e. Education/Outreach/Public Relations:
  - i. Managing Salinity documents (Richard) – WRCO's salinity document was sent to WRRF for peer review. It is currently being updated and will then go to the Research Advisory Committee.
  - ii. Outreach/Inter-organizational activities (Laura) – No update.
- f. Potable Reuse (Dave)
  - i. Potable Reuse Guidelines Update (John R) – There are a few things going on. National Guidelines are being developed by the National Water Research Institute (NWRI) and WRA which John will share when he gets them. Next week (3/19) there's a JAC meeting John is talking at. American Water Works Association (AWWA) is hosting a potable reuse webinar on April 8. New Mexico and Texas are separately developing regulations. It's not clear where we'll end up regarding national regulations.
- g. WRCO Participation in Research (John R) – We have developed three research priorities with specific Colorado benefits and will be requesting funding from the Colorado Basin Roundtables (Water Supply Reserve Account grants, WSRA). The projects are: 1. Framework for developing direct potable reuse (DPR) regulations and applying what we can learn from other states 2. Applying model communication plans from WRRF 13-02-1 for DPR in Colorado, 3. Leveraging potable reuse planning tools from WRRF and others. We'll likely be asking for \$5,000 – 10,000 from WRCO in support. We plan to submit applications to the roundtables in April and present at the May meetings. Our application for statewide WSRA funding will be made to the Colorado Water Conservation Board (CWCB) in August with a presentation at the September CWCB board meeting. Phil noted that HDR went through this process for their Zero Liquid Discharge (ZLD) project and it is very time consuming and you must have staff at CWCB behind the concept. We also need to start bringing others such as the Water Research Foundation (WRF), Water Environment Foundation (WERF), the CWCB staff and CDHPE. Dave and John W (WRF) will talk. Damian will discuss with the Colorado CWA-SDWA Nexus Workgroup. Richard also provided a list of ongoing WRRF research to Dave (attached).
- h. Membership (Richard) – See draft list of possible reuse utilities (attached). WRA is developing their membership growth plan for state associations. A call will be scheduled (Richard, Dave and Laura) to review and finalize the list before sending it to WRA which will then do the outreach.
- i. Regulations/Local Codes (Tara) – No update
- j. Reuse Roundtable (Damian) – Damian spoke with Melissa Meeker for her input. Denver water has been doing some preliminary planning and reaching out to key people. If anyone has time or ideas contact Damian. We had been thinking about an August timeframe for the event. Abbey mentioned that we may want to consider merging with the Awards Ceremony as we better figure out the format and topic areas.

### 3. Other Business

- a. CWA/SDWA Nexus Workgroup - No update
- b. State Water Plan (Laura) – See WRCO’s BIP comment letter (attached) and Melissa Meeker’s comment letter (attached). Thanks to everyone who helped pull these together so quickly. Next steps include reaching out to key roundtable members, providing public comments at roundtable meetings next week, getting our WSRA grant application in, and sitting down and with the CWCB to discuss the comments and continue to help shape the Colorado Water Plan.

#### 4. WRCO Items

- a. Approve January 2015 minutes and financials (Dave)  
Motion: Bob Anastasov  
2<sup>nd</sup> Richard  
The motion passed unanimously
- b. WRCO Treasurer’s Report for this Month (Jena) – Financials (attached) and list of proposed 2015 expenditures were reviewed. Dave will ask Jena to start tracking expenses so we can keep track of approved expenses v actual.

#### 5. WRCO Business

- a. Reuse Presentation at AWRA (John/Tara) – John and Tara will present at the Colorado Section of the American Water Resource Association’s (AWRA) Annual Symposium (1 day) on 5/1 at the Mount Vernon Country Club. They’ll look back at non-potable reuse and will discuss the role reuse plays looking to the future.
- b. DRP Workshop in May 2015 (Dave/Phil) – (See attached draft proposal) The Colorado ZLD project HDR worked on led to the development (at the request of CWCB staff) of a White Paper on DPR barriers in Colorado, which several WRCO members are peer reviewing. A workshop is being organized (Dave is on the planning committee) that will bring technical experts together provide input on the paper and work towards a list of actions the state could take to advance DPR. Teresa Connor (WERF) and John Whitley (WRF) have been very involved and WRCO has been approached to co-sponsor the workshop with will take place in late May/early June. Dave will circulate list of potential invitees from local utilities for others to provide input on. WRCO agreed to contribute \$2,000 from WRCO to help cover food and travel for out of state experts associated with the workshop.

Motion that WRCO to contribute \$2,000 for the DRP workshop: Abbey  
2<sup>nd</sup>: Richard  
Motion passed unanimously

- c. WRCO Presentation Schedule (Damian) – Damian will check with scholarship recipients to see if the rescheduled July meeting date (7/9) works for them. If we have the awards at an after work reception we might push the July WRCO meeting back by an hour to a 2 pm start. We’ll decide at the next meeting. If the Reuse Roundtable happens we may have the awards ceremony then. Abbey and Damian will touch base off-line. John R will ask Guy Carpenter if the new July meeting date works for him to present on DPR
- d. Social Media Policy (John) – Being working on. Is in its formative stages.

- e. Update on WRCO archives and Dropbox (Laura) – Laura will have an intern finish uploading the files. We will no longer need to maintain hard copy binders once this is complete. Richard will upload the national board binders to our dropbox.

## 6. WRA/WRRF Items

- a. WateReuse Association (WRA) updates - (Richard) – There is a lot going on. Melissa is focused on the reorganization of WRA and WRRF. There will be a bylaw change vote before September board meeting to move forward on merging the two boards. Everyone will receive info on this and is encouraged to participate in the vote. The initial combined board will have 37 members with that down to around 24 in 2017. They are looking for nominations (due 3/20) from a water agency to serve on board of directors (on both boards) as they work to make board more reflective of the membership. The position has a two year term that can be renewed twice with the potential for another two years with board approval, for a maximum of eight years. A list of meetings and upcoming webcasts was shared (attached). WateReuse has a new logo and is working on their new website rollout.
- b. Legislative/lobbying effort update (Damian) – What will our goal(s) be? – No Update. We could try to generate a goal at the Reuse Roundup. Richard will share some ideas that were initiated at WRA. WRA is looking for members for Legislative Committee (national focus) from state sections (see attached).
- c. Global Connections Map request for funding (Dave) - The Australian Water Recycling Centre of Excellence is developing an interactive map of potable reuse projects around the world. It costs about \$12,000 for mapping, videos, interviews, etc for each of 14 sites. Prairie Waters is the one Colorado site and WRA has requested \$5k from WRCO to help cover the costs to put it on the map. Numerous requests were made that Dave will pass along to WRA including for: a map template, a proposal, deliverables, goals, audience, list of sites that have already signed up, etc... Abbey suggested that videos and other materials that have already been developed locally could be useful.

## 7. AWWA/RMWEA/WEF Items

- a. AWWA Water Reuse Committee Updates (Tara) – No Update
- b. WEF Water Reuse Committee Updates (Frank) - No Update.

## 8. Upcoming Activities

- a. Water Reuse California, March 15-17, 2015 – Los Angeles, CA
- b. JTAC Lunch, March 19, 2015 – Denver Water
- c. Sustainable Water Management Conference, March 15-18, 2015 - Portland, OR
- d. WRRF Industrial Reuse Webcast, March 12, 2015 (Richard will look into hosting at Sand Creek)
- e. RMWEA PWO Industrial Wastewater Workshop, April 24, 2015 – Denver area (location TBD), CO
- f. AWRA Colorado Annual Symposium, May 1, 2015 – Mt. Vernon Country Club
- g. Water Reuse & Desalination Research Conference, May 4-5, 2015 - Huntington Beach, CA
- h. ACE, June 7-10, 2015 - Anaheim, CA
- i. RMSAWWA/RMWEA Joint Annual Conference, September 13-16, 2015 – Loveland, CO

- j. 30th Annual WaterReuse Symposium, September 13-15, 2015 – Seattle, WA
- k. WEFTEC, September 26-30, 2015 – Chicago, IL
- l. Water Smart Innovations, October 6-10, 2015 – Las Vegas, NV
- m. Water Infrastructure, October 13-16, 2015 – Bethesda, MD
- n. WQTC, November 15-19, 2015 – Salt Lake City, UT

**9. Future Meeting Schedule**

May 7	Plum Creek
July 9	<u>Note, was changed from the July 2.</u> City of Aurora (different room) May shift start time to 2 PM – decision at May mtg.
September 3	Plum Creek
November 5	City of Aurora
TBD	Strategic Planning



**Priority Projects for Basin Water Supply Reserve Account / Statewide Water Supply Reserve Account Grant Funding**

REVISED DRAFT February 20, 2015

Project Name	Content & Goals	Rationale for Prioritizing this Project
1. Framework for Developing Potable Reuse Regulations for Colorado	Summarize and synthesize relevant research that can support development of defensible, protective regulations for potable reuse in Colorado. Synthesize other states' approaches to (and status of) developing regulations for IPR (GW infiltration, GW injection, reservoir/stream augmentation) and DPR. Define risk factors and develop a proposed framework, timeline, and process for developing regulations for IPR and DPR in Colorado.	Significant work is being conducted nationally to define potable reuse risks, set treatment thresholds, establish monitoring requirements, etc. Other states are developing regulatory structures, often in response to projects under construction. This project will position Colorado to develop regulations in advance of any project, rather than as a reaction to an online project. As appropriate, this work will incorporate findings in the Analysis of Barriers to Direct Potable Reuse white paper currently being developed for the CWCB (CTGG12015).
2. Colorado Statewide Communication Plan for Potable Reuse	Apply/implement the work products from the WaterReuse Research Foundation WRRF 13-02-1 report (Model Communication Plans for Increasing Awareness and Fostering Public Acceptance of Direct Potable Reuse) to advance public understanding and support for potable reuse projects in Colorado, using a statewide collaborative approach.	Potable reuse involves the use of a proven and reliable technology to purify recycled water so that it can safely supplement the drinking water supplies of communities. It is especially valuable to communities in water-scarce regions. Experience among water agencies and municipalities has shown, however, that public acceptance of direct potable reuse (DPR) is one of the primary challenges facing this source of water supply. This WRRF report provides guidance on specific steps for outreach to legislative delegations, media, and public specifically intended for use by WRA state sections to use in supporting regulatory development and public acceptance. Benefits would accrue statewide, directly and indirectly.
3. Leveraging Potable Reuse Planning Tools	Facilitate use of water reuse decision support research products developed by WRRF and other organizations for assessing nonpotable and potable reuse opportunities; provide education and training via workshops and/or targeted outreach, including demonstration of the tools with case studies for one or more utilities.	Significant work has been conducted by WRRF and others to provide tools for assessment of water reuse project constraints and opportunities, including indirect and direct potable reuse. However, many Colorado utilities are unaware of the work products that can be applied locally to help make informed decisions and foster additional reuse. By demonstrating these tools to a broad range of water planners, Colorado utilities will be better positioned to make informed reuse decisions and may identify additional opportunities to implement potable reuse.

Town/Utility
Cañon City
Cherokee Metro District (W&S)
Donala W & S
East Cherry Creek Valley Water and Sanitation
Erie
Greeley
Inverness W & S
Lafayette
Little Thompson Water District
Longmont
Louisville
Loveland
North Weld County Water District
Parker Water and Sanitation District
Platte River Power Authority
Sterling Ranch
Superior
Thornton
Castle Pines Metro District
Castle Pines North Metro District





1199 North Fairfax St, Suite 410 • Alexandria, VA 22314

February 24, 2015

South Platte and Metro Basin Roundtables  
Colorado Water Conservation Board  
1313 Sherman Street, Room 721  
Denver, CO 80203

Re: WateReuse Comments on the Draft South Platte Basin Implementation Plan

Dear Chairpersons Frank and Koleber and Members of the South Platte and Metro Basin Roundtables:

The WateReuse Association is pleased to have the opportunity to review the South Platte Basin Implementation Plan. The WateReuse Association would like to first commend the Roundtable's efforts and that of the overall Colorado State Water Plan which both recognize that water reuse will need to be part of any multi-faceted solution to the state's water future.

In existence since 1990, WateReuse is the premier nonprofit organization in the country that is dedicated solely to creating sustainable sources of freshwater through water reuse and recycling. For the past few years, we have been actively engaged in policy discussions and research associated with potable reuse, including over 25 individual research projects totaling more than \$12 million. In addition, we have years of research on agricultural, industrial and other nonpotable reuse options, all necessary for securing a sustainable water supply for communities around the country.

I am aware that our state section, WateReuse Colorado has supplied detailed comments to the plan. As such, we are offering high level comments on the overall direction of the plan and would like to offer our technical assistance through our published research, as well as that of the member experts, if you would like to discuss any specific issues.

In general, the Plan states that there are challenges to implementing reuse projects due to water law and property rights, as well as technical, economic and social matters that must be addressed. We have seen however, in Colorado as well as other states that implement western water law that there are still opportunities that can be explored. The challenges are often similar to those faced when attempting to secure additional traditional sources, however this document does not address this reality.

In addition, WateReuse agrees that conservation is a critical component of *extending* existing water supplies, but should not be grouped with reuse which actually results in new water. Conservation efforts have made significant progress over the last decade in helping to address per capita use due to appliances, toilets, etc., as well as changes in personal attitude toward the use of



[www.watereuse.org](http://www.watereuse.org)

water. Reuse on the other hand, if implemented consistent with legal mandates, can actually increase water supplies and serve to offset traditional water supplies needed for healthy ecosystems.

Along with any successful water reuse strategy there should be ambitious but realistic goals. These goals provide a measurable point in which to evaluate success of a particular strategy. For example, the 2012 Texas State Water Plan set a goal for water reuse with an 800% increase in supply from water management strategies involving reuse from 2010 through 2060. This is an aggressive goal, but it is a goal that if achieved would go a long way to enhance the state's water supply. A similarly aggressive goal from this region in Colorado would send a message to decision makers that the state is committed to investing and promoting water reuse as a viable part of the state's future water portfolio.

As with most plans, the South Platte Basin Implementation Plan should be thought of as a living document. As state regulations for reclaimed water continue to be expanded to allow additional uses including various commercial and industrial uses and food crop irrigation, the Roundtables should be encouraged to think beyond this plan at actual project options. Expanding the types of activities that can use reclaimed water has the potential to create new demand for reuse projects by using a fit-for-purpose model that seeks to match water with the appropriate level of treatment to its appropriate use. This can result in significant savings by preventing the overtreatment of water to standards beyond what is necessary while still protecting public health.

The Colorado State Water Plan and the South Platte Basin Implementation Plan are significant steps forward in the right direction to secure a sustainable future for the state's water resources. As stated earlier, the WateReuse Association and Research Foundation can provide the research and educational resources to help push an aggressive water reuse strategy forward. By following many of the reuse recommendations in these plans, as well setting ambitious but realistic goals for water reuse, Colorado can begin setting itself on a path to securing a future with sustainable water supplies.

If you have any questions regarding our comments, or would like to talk about ways to address our comments, please do not hesitate to contact us at 703/548-0880. Thank you for your consideration.

Sincerely,



Melissa L. Meeker  
Executive Director

cc: Dave Takeda, WateReuse Colorado President





February 26, 2015

Subject: WateReuse Colorado Comments on the Draft South Platte Basin Implementation Plan

Dear Chairpersons Koleber and Frank, and Members of the Metro and South Platte Basin Roundtables:

WateReuse Colorado is the state section of the WateReuse Association. WateReuse Colorado comprises 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<sup>1</sup>, 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 reuse-related sections of the July 2014 draft of the South Platte Basin Implementation Plan (SP-BIP).

A multitude of existing and planned reuse projects, many of which are innovative, can be found throughout the basin. We commend the Metro and South Platte Basin Roundtables for your continued commitment to advancing reuse. We hope our comments will assist in achieving this goal.

We concur with the SP-BIP statement (Section 1) that "solutions must be pragmatic, balanced, and consistent with Colorado water law and property rights." And we wholeheartedly acknowledge that there are real and perceived constraints on the ability to reuse water in Colorado. As many of our members will attest, there are practical constraints (technical, economic, and social) to reusing 100 percent of what would be legally reusable. We also acknowledge that water reuse does not reduce demands; its value lies instead in maximizing the efficient use of supplies. It differs from water conservation that it is a source of supply, rather than an overall demand reducer.

However, recognizing that the SP-BIP is the plan that is charged with identifying an implementation path for Colorado's most populous and agriculturally productive basin, we encourage you to revise the SP-BIP to:

1. Separate discussions of water conservation from water reuse.
2. Set specific goals for implementation of water reuse projects in the South Platte and Metro basins.
3. Recommend specific actions that can mitigate the constraints to water reuse and facilitate achieving specific goals for reuse, rather than simply reiterating the limitations on reuse.
4. Acknowledge and quantify the reusable supplies potentially associated with water from the Identified Projects and Processes (IPPs).

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<sup>1</sup> 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.

5. Better acknowledge the major shift in the water industry toward potable reuse and the role potable reuse can and will play in addressing supply needs.

Each of these items is discussed below.

### **1: Separate Conservation from Reuse**

These two water management strategies provide two very distinct and independently important approaches for meeting the basins' future needs. Water conservation reduces demand, while water reuse helps make efficient use of supplies. The two strategies are discussed and described in the same context throughout many sections of the draft SP-BIP. While we appreciate that conservation and reuse are recognized as top priorities in helping meet future demands, by merging two dissimilar water management strategies, the ability to clearly act on and measure progress on either one is blurred. We recommend that the SP-BIP call out water reuse as an important strategy distinct from urban conservation.

### **2. Set Specific Reuse Goals**

Section 1 of the SP-BIP ("Goals and Measurable Outcomes") uses language such as:

- "...reaching enhanced levels of municipal conservation and reuse."
- "...continue to make the most efficient use of their supplies."
- "...water reuse and conservation is a critical component of meeting future water needs."

These statements and the "measurable outcomes" for Water Conservation, Reuse, and Efficiency in Section 1 and Section 5.5 do not quantify any particular or measurable goal for reuse, other than to "maintain and enhance current levels of municipal reuse." The lack of specificity – coupled with a literal read of the document – implies that "one more gallon" of reuse could achieve this goal. We believe that there are significant opportunities and real needs for water reuse to be a measurably larger portion of the basins' water supply future. We encourage the South Platte and Metro Basin Roundtables to use your roles and this [implementation plan](#) to truly set a course for expanding the Basins' strong leadership in water reuse.

### **3. Recommend Specific Actions to Mitigate Water Reuse Constraints**

Numerous limitations to reuse are described throughout the SP-BIP (e.g., Section 4.3, Section 5.5, Section 5.9), including infrastructure capacities, losses, supply and demand timing, water quality, treatment costs and brine disposal, and regulatory requirements. Many if not all of these limitations must also be addressed for many new "raw water" supplies or other strategies. For example, brine disposal is a challenge for treating many lower-quality sources with reverse osmosis (RO) – as evidenced by several facilities in the state that use RO to treat groundwater supplies for potable use. Moreover, significant work is ongoing both in national-level research and local implementation toward alternatives to RO treatment for potable reuse, including technologies that do not generate concentrated brine streams.

Rather than listing these more general limitations as being specific to reuse, they could be moved to a general “New Supply Limitations” section. Similarly, Section 5.5.2.3 (Implement Additional Reuse) includes language that additional reuse will require systems “with costly pipeline, pumping, and treatment systems which have high operating costs and consume large amounts of energy.” Again, we would note that most new supplies, whether transmountain diversions, agricultural transfers, or other, will likely face these same challenges that are not unique to reuse projects. In some circumstances, direct potable reuse (DPR) projects where a utility captures and treats its own return flows could have lower costs and energy use than other new supply options.

We encourage the SP-BIP to better acknowledge the significant improvements that have been made toward addressing historical constraints to reuse. For example, the Colorado Department of Public Health and Environment Regulation 84 (nonpotable reuse) has been amended several times since its 2000 inception to authorize additional new uses for reclaimed water. Most recently in 2013, the regulation was amended to greatly increase the authorized number and types of commercial and industrial reuse applications.

We understand and are sensitive to concerns of downstream water users that additional reuse of legally reusable existing supplies will result in decreased return flows. It is important to note that much of the future reusable supply will be derived from new sources of water and these reusable supplies have not historically been part of the water rights administration system and used by others. We feel that all water users in the basin are best served by optimizing water supplies in hand through reuse and conservation and would put forth a slightly different perspective. By prioritizing reuse of water from existing projects and IPPs with legally reusable supplies, we ensure those supplies are stretched to fill a greater portion of the gap, thus decreasing the need for other supplies, which are frequently sought from the agricultural community. We encourage the Roundtables to consider this and perhaps to include language along these lines to the SP-BIP.

The SP-BIP implies throughout several sections that water reuse by exchange and successive uses already provides essentially 100 percent reuse of all supplies in the basin. However, there are known limitations on exchange potential on the South Platte River and its tributaries. There are several dry-up points on the South Platte and its tributaries already, and those will intensify over time. These dry-up locations will severely constrain the ability to increase the amount of water reused by exchange. We believe that if we are going to effectively reuse our future supplies, it will require alternate methods such as direct non-potable reuse and potable reuse.

The SP-BIP also mentions the impacts of drought restrictions on reuse potential, via reduced wastewater flows. While some degree of indoor water use reductions may be seen, drought restrictions typically target outdoor usage, with less of an impact on indoor flows. Most metro-area communities already have implemented significant conservation programs that address indoor water use in all years (not just drought years). Thus, the impact to wastewater flows and water reuse from this time forward would be minimal.

We encourage the South Platte and Metro Basin Roundtables to commit to finding pathways for alleviating the listed constraints to expanding reuse. The SP-BIP as written provides many explanations of the hindrances to reuse, but provides little in terms of an actionable implementation plan for achieving its stated goal of enhancing reuse in the face of these challenges.

The WaterReuse Association and WaterReuse Colorado are already working to alleviate constraints that limit water reuse in Colorado, and we offer our support to the Basins toward that same goal. For example, we could facilitate development of a framework for development of potable water reuse regulations, which would provide consistent and protective requirements for potable reuse systems and help foster public confidence in potable reuse. We could also implement the recommended public outreach strategies from the WaterReuse Research Foundation (WRRF) project 13-02-01 (“Model Communication Plans” for Increasing Awareness and Fostering Public Acceptance of Direct Potable Reuse”) to help increase awareness and foster public acceptance of DPR in Colorado. Lastly, we could assist the industry by increasing awareness/training/use of applied research projects from WRRF and others who have dedicated significant time and effort into addressing challenges common to the industry.

#### **4. Acknowledge and Quantify the Reuse Potential of IPPs**

We encourage the SP-BIP to consider the reuse potential that may result from non-reuse specific IPPs, as this may help fill the gap in supply that’s needed to meet the Basins’ future demands. IPPs that may result in legally reusable supplies include new transbasin diversion projects, traditional and alternative agricultural transfers (consumptive use portions), non-tributary groundwater, and supplies with decreed reuse. While reuse may not be feasible in all situations, in many cases – especially as we look to the future – it may be the most feasible and least impactful new supply available. By considering and accounting for the reuse potential of the water sourced from IPPs, the “success rate” of those IPPs that are implemented is effectively higher, further reducing the gap and/or deferring the need to implement additional projects.

For reuse-specific IPPs, we believe that nonpotable reuse projects are much more than 60 percent likely to succeed. Unlike many of the IPPs, nonpotable reuse uses a defined local resource with a defined process for regulatory authorization. Potable reuse projects may have an anticipated success rate of around 60 percent, but we anticipate that will rapidly increase as the technical, economic, regulatory, and social understanding and acceptance of potable reuse grows. Additionally, we are available to assist in identifying additional reuse IPPs that are not currently identified in the SP-BIP.

#### **5. Acknowledge the Role of Potable Reuse**

Section 5.5.9.2 of the SP-BIP briefly touches on potable reuse, but underestimates the role potable reuse is likely to play in meeting future demands in the basins. Indirect potable reuse (IPR) is already being practiced in a few prominent projects in the Basin. DPR is not in use in Colorado to date, but several projects have been implemented or are being implemented in Texas and New Mexico, largely in

response to prolonged drought. 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 SP-BIP planning timeframe where IPR is greatly expanded and DPR is a commonplace tool for meeting Colorado's future water needs.

Rather than simply recommending "additional consideration be given to DPR," we recommend that the SP-BIP more directly recommend implementation of IPR and DPR to meet the future basins' needs. Just 5 years ago when SWSI 2010 was considering our water future, DPR was essentially unthinkable in the U.S. Today, we are rapidly implementing DPR in the U.S. and the treatment and monitoring and regulatory safeguards for it. The SP-BIP should be leading this effort for Colorado, with many of the state's most progressive water utilities moving in this direction.

### **Summary**

We hope these comments help the Roundtables advance reuse in the South Platte and Metro Basins. We offer our assistance in incorporating our suggestions into the existing draft SP-BIP. We welcome any questions or comments, and would be happy to provide additional information. Again thank you for this opportunity and for your leadership in developing a plan to meet the Basins' water demands.

Sincerely,

A handwritten signature in blue ink, appearing to read "David L. Takeda".

David L. Takeda, P.E.  
President  
WateReuse Colorado  
303-903-0918  
dave@mskwater.com

**WateReuse Association**  
**WateReuse CO - Income Statement**  
January 1 through March 3, 2015

	<u>Jan 1 - Mar 3, 15</u>
<b>Income</b>	
<b>4050 · Membership</b>	
<b>4300 · MEMBERSHIP DUES</b>	
4311 · 30% of CO Member Dues	11,003.97
<b>Total 4300 · MEMBERSHIP DUES</b>	<u>11,003.97</u>
<b>4325 · State Section Membership</b>	
4325.60 · Colorado	1,500.00
<b>Total 4325 · State Section Membership</b>	<u>1,500.00</u>
<b>Total 4050 · Membership</b>	<u>12,503.97</u>
<b>Total Income</b>	<u>12,503.97</u>
<b>Gross Profit</b>	12,503.97
<b>Expense</b>	
<b>5300 · SECTION EXPENSES</b>	
<b>5800 · WateReuse CO Expenses</b>	
5800.10 · Board Meeting	277.80
5800.25 · Membership Credit Card Fees	55.79
<b>Total 5800 · WateReuse CO Expenses</b>	<u>333.59</u>
<b>Total 5300 · SECTION EXPENSES</b>	<u>333.59</u>
<b>Total Expense</b>	<u>333.59</u>
<b>Net Income</b>	<u><u>12,170.38</u></u>



**WateReuse Association**  
**WateReuse CO - Balance Sheet**  
As of March 3, 2015

	<u>Mar 3, 15</u>
<b>ASSETS</b>	
<b>Current Assets</b>	
Cash	
Cash	63,900.35
<b>Total Cash</b>	<u>63,900.35</u>
<b>Total Current Assets</b>	<u>63,900.35</u>
<b>TOTAL ASSETS</b>	<u><u>63,900.35</u></u>
<b>LIABILITIES &amp; EQUITY</b>	
<b>Liabilities</b>	
<b>Current Liabilities</b>	
<b>Accounts Payable</b>	
2100 · Accounts Payable	
2111 · Accounts Payable - WateReuse CO	277.80
<b>Total 2100 · Accounts Payable</b>	<u>277.80</u>
<b>Total Accounts Payable</b>	<u>277.80</u>
<b>Total Current Liabilities</b>	<u>277.80</u>
<b>Total Liabilities</b>	277.80
<b>Equity</b>	
3210 · WateReuse CO Reserves	51,452.17
Net Income	<u>12,170.38</u>
<b>Total Equity</b>	<u>63,622.55</u>
<b>TOTAL LIABILITIES &amp; EQUITY</b>	<u><u>63,900.35</u></u>

***Proposal for***  
**Colorado Direct Potable Reuse Workshop**  
***Draft***

**Objective:** The objective of this workshop is to characterize the benefits and possible barriers associated with the implementation of direct potable reuse (DPR) in Colorado. The findings of the workshop can be used to develop a roadmap for the development of DPR in Colorado and support the recommendations made by the Colorado Water Plan regarding potable reuse.

The workshop will be designed to obtain input and insight from a broad, representative group of interested Colorado stakeholders and industry DPR experts.

**Basics:** The point of departure for the workshop will be the Colorado DPR white paper, which is currently under development. The Colorado DPR white paper reviews technical issues associated with implementing DPR in Colorado. This paper addresses the regulatory, technical, operational, and public perception considerations common to any potential project in Colorado. It does not address water rights or economic issues, as these issues would be specific to individual projects. This paper will be peer reviewed by a set of experts in Colorado through WERF's Peer Review Process.

**Workshop proposal:** A one day workshop on vetting the issues identified in the white paper and gaining consensus on defining the technical questions or issues that would need to be addressed if DPR were to be considered in Colorado. An inclusive set of stakeholders will be invited, broadly broken into groups of State and Regulatory perspectives; Utility Professionals including Utility Service Providers and Consultants; and Academic and Research Agencies. National experts dealing with DPR in other areas of the United States would be invited to the workshop. A professional facilitator would most likely be needed given the anticipated response to the workshop.

**Expected Outcome and Deliverable:** A report capturing the feedback of the stakeholders present, consensus where appropriate, and range of concerns from stakeholders that the workshop sponsors could use to formulate the appropriate framework and plans for consideration of DPR in Colorado.

**Timeframe:**

Jan 2015: Identify potential workshop sponsors and form Planning Committee

Feb 2015: Planning Committee develops workshop format, agenda, invitation and schedule

March 2015: DPR White Paper Available

Last half of April – May 2015 – Workshop

June 2015 – Modify white paper based upon workshop feedback and provide to project sponsors.

**Budget:** TBD Includes – potential facilitation; travel expenses for out of state experts; meals (lunch, morning and afternoon snacks); notes from meetings; revisions to white paper.

**Location** – in the Denver area. Target a free meeting space such as AWWA conference room or maybe at a subscriber facility.

**Size of Workshop** – most likely about 30 people, say up to 10 outside experts (invite list would need to be developed by planning committee), five state people including regulatory perspective.

<b>California Group</b>		
West Basin	Up to six Interviews -- 4 videos of 3-5 minutes in length Deliver four videos that convey need, benefit, health/safety and specific processes	\$16,900
WRD	Up to four Interviews --3 videos of 3 -5 minutes in length Deliver three videos that convey need, benefit and specific processes	\$14,700
San Diego	Up to two interview -- 2 videos of 3 -5 minutes in length Deliver two videos that cover needs and potential benefits utilizes existing animations	\$13,500
Santa Clara Valley WD	Up to two interview -- 2 videos of 3 -5 minutes in length Deliver two videos that cover needs and potential benefits and general video of the plant	\$13,500
Ventura	One Interview --1 video 3 -5 minutes in length Deliver one video with broad overview of the plant processes/community	\$11,100
Oxnard	One Interview --1 video of 3 - 5 minutes in length Deliver one video with broad overview of the plant processes/community	\$11,100
<b>Total California Group</b>		<b>\$80,800</b>
<b>This assumes one airfare for this group.</b>		

<b>Texas Group</b>		
El Paso	Up to six Interviews -- 6 videos of 3 - 5 minutes in length Deliver four videos that convey need, benefit, health/safety and specific processes	\$16,900
Big Spring	One Interview --1 video of 3 - 5 minutes in length Deliver one video with broad overview of the plant processes/community	\$11,100
Wichita Falls	One Interview --1 video of 3 - 5 minutes in length Deliver video with broad overview of the plant processes/community	\$11,100
<b>Total Texas Group</b>		<b>\$39,100</b>
<b>This assumes one airfare for this group.</b>		

<b>Southeast Group</b>		
Gwinnett	Up to two interview -- 2 videos of 3 -5 minutes in length Deliver two videos that cover needs and benefits and overview of plant processes	\$14,200
Clearwater	One Interview --1 video of 3 - 5 minutes in length Deliver video with broad overview of the plant processes/community	\$11,900
<b>Total Southeast Group</b>		<b>\$26,100</b>

<b>Scottsdale</b>	Up to four Interviews --3 videos of 3 -5 minutes in length Deliver three videos that convey need, benefit and processes	\$15,500
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<b>Aurora</b>	One Interview --1 video of 3 - 5 minutes in length Deliver video with broad overview of the plant processes/community	\$11,900
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## APPENDIX

### A-1 Research Reports Published in the last quarter:

- *Enzymes: The New Wastewater Treatment Chemical for Water Reuse (WRRF-10-16)* – Published December 2014
- *Model Communication Plans for Increasing Awareness and Fostering Acceptance of Direct Potable Reuse (WRRF-13-02)* – Published January 2015
- *Comparison of Chemical Composition of Reclaimed and Conventional Waters (WRRF-06-006)* – Published February 2015
- *Establishing Nitrification Reliability Guidelines for Water Reuse (WRRF-10-15)* – Published February 2015

### Anticipated next quarter:

- *Role of Retention Time in the Environmental Buffer of Indirect Potable Reuse Projects (WRRF-10-05)* – Anticipated March 2015
- *Desalination and Concentrate Management Policy Analysis for the Arid West (WRRF-11-09)* – Anticipated March 2015
- *Formation of Nitrosamines and Perfluorochemicals During Ozonation in Water Reuse Applications (WRRF-11-08)* – Anticipated March 2015
- *Development of New Tracers for Determining Travel Time Near MAR Operations (WRRF-09-11)* – Anticipated March 2015

### A-2 Webcast Schedule

Project	Title	Speakers	Date	# of Attendees	Revenue
WRRF-11-08	Formation of Nitrosamines and Perfluorochemicals during Ozonation in Water Reuse Applications	Eric Dickenson, SNWA	12/11/14	88	\$1,437
WRRF-09-02	Framework for Informed Planning Decisions Regarding Indirect Potable Reuse and Dual Pipe Systems	Guy Carpenter, Carollo	1/8/15	163	\$3,321
WRRF-13-02	Model Public Communication Plan for Advancing DPR Acceptance	Mark Millan, Data Instincts	2/12/15	TBD	TBD
WRRF-13-04	Drivers, Successes, Challenges and Opportunities for Onsite Industrial Water Reuse: a Path Forward	Joan Oppenheimer,	3/12/15	TBD	TBD

	for Collaboration and Growth	MWH			
WRRF-12-06	Engineered Storage Systems	Eva Steinle-Darling, Andy Salveson, Carollo	4/9/15	TBD	TBD
WRRF-14-08	Economics and Opportunities of DPR	Bob Raucher, Stratus Consulting	5/14/15	TBD	TBD
WRRF-10-06 Phase II	Lower Energy Treatment Schemes for Water Reuse Phase 2	Eric Marchand, UNR	6/11/15	TBD	TBD
WRRF-13-06	Methodology for Development of IM&E Mitigation Programs	John Steinbeck	7/9/15	TBD	TBD
TBD	TBD		8/13/15	TBD	TBD
TBD	TBD		10/8/15	TBD	TBD
TBD	TBD		11/12/15	TBD	TBD
TBD	TBD		12/10/15	TBD	TBD

# Research Director's Report

December 1, 2014 – February 5, 2015

## Research Metrics


	Quarter (Dec 1 – Feb 5)	Year 2014
# Reports published	4	17
# Reports downloaded	972	2365
Report revenue	\$2,468.70	\$8,383.00
# Webcasts	2	11
# Webcast registrants	251	1201
Webcast revenue	\$4,758	\$19,802

Details can be found in the appendix

## 2014 Research Project Status

Project #	PM	Project Title	PI	Status
WRRF-14-01	Justin	Integrated Management of Sensor Data for Real Time Decision Making	Jeff Neeman, Black & Veatch	Agreement under negotiation. Planning to apply USBR funding (\$150,000)
WRRF-14-02	Stefani	Establishing Additional Log Reduction Credits for WWTPs	Zia Bukhari, American Water	Agreement under negotiation. Planning to apply USBR funding (\$150,000)
WRRF-14-03	Justin	Develop Methodology of Comprehensive (Fiscal/triple bottom line) Analysis of Alternative Water Supply Projects Compared to DPR	Ben Stanford, Hazen & Sawyer	Project start in January. Planning to apply USBR funding (\$100,000) – if foreign subcontractors are permitted
WRRF-14-04	Justin	Framework of Onsite Industrial Reuse	Brian Moore, ARCADIS	Project just began Jan 1
WRRF-14-05	Stefani	White Paper: Current use and trends of reuse in the Hydraulic Fracturing Industry	TBD	Award pending
WRRF-14-06	Kristan	Methodology for Assigning Pathogen Removal Credits for Sub-Surface Desalination Intakes	Zia Bukhari, American Water	Project start December 1, Planning to apply USBR funding (\$150,000)

WRRF-14-07	Kristan	Performance and Cost Review of Existing Desalination Plants which use Conventional and Membrane Pretreatment Processes Prior to RO	Joe Jacangelo, MWH	Agreement under negotiation. Planning to apply USBR funding (\$100,000)
WRRF-14-08	Justin	Economics of Direct Potable Reuse	Bob Raucher, Stratus	Report published 11/17, available at no cost on website – over 600 downloads to date
WRA-14-01	Justin	Potable Reuse Guidelines White Paper	Jeff Mosher, NWRI	Successful PAC/panel meeting Jan 21 in DC, completion spring 2015.
WRRF-14-09	Kristan	Use of Heated Metal Oxide Particles (HMOPs) as Adsorbents for Membrane Fouling Reduction in Water Reuse/Desalination Applications	Orren Schneider, American Water	Project started in September, on schedule
WRRF-14-10	Stefani	Enhanced Pathogen and Pollutant Monitoring of the Colorado River Municipal Water District Raw Water Production Facility at Big Spring, Texas	Eva Steinle-Darling, Carollo	Project started in September 2014.
WRRF-14-11	Stefani	UV Disinfection Knowledgebase for Reuse Applications	Harold Wright, Carollo	Project started in September. Planning to apply for USBR funding (\$400,000)
WRRF-14-12	Julie	Failsafe Potable Reuse Project at the City of San Diego's Advanced Water Purification Demonstration Facility	Shane Trussell, Trussell Tech	Project started in September; IAP Meeting Dec 9-10 in San Diego. Planning to apply for USBR funding (\$400,000)
WRRF-14-13	Justin	From Sewershed to Tap: Resiliency of Treatment Processes for DPR	TBD	PAC formed – RFP in development
WRRF-14-14	Kristan	Framework for Public Health Monitoring: Workshop	TBD	PAC formed – RFP in development
WRRF-14-15	Stefani	Application of bioanalytical tools to assess biological responses associated with water at DPR facilities	TBD	PAC formed – RFP in development
WRRF-14-16	Justin	Operational, Monitoring, and Response Data from Unit Processes in Full-Scale Water Treatment, IPR, and DPR	TBD	PAC formed – RFP to be released shortly
WRRF-14-17	Stefani	White Paper on the Application of Molecular Methods for Pathogens for Potable Reuse	TBD	PAC formed – RFP in development
WRRF-14-18	Stefani	Ensuring stable microbial water quality in Direct Potable Reuse distribution systems	TBD	PAC formed – RFP in development
WRRF-14-19	Kristan	Predicting RO removal of toxicologically relevant unique organics	TBD	PAC formed – RFP in development

Association	 <b>WATERREUSE</b>	Research Foundation
<b>2015</b>		
<ul style="list-style-type: none"> <li>➤ <b>AMTA board members to visit WR offices;</b> Alexandria, VA January 15</li> <li>➤ <b>California Section Conference;</b> Los Angeles, March 15-17</li> <li>➤ <b>Board of Directors Meeting Q1;</b> Las Vegas, February 18-20</li> </ul>	<p>Q I January - March</p>	<ul style="list-style-type: none"> <li>➤ <b>Potable Reuse Guidelines PAC meeting;</b> Washington DC, January 21-22</li> <li>➤ <b>Water Management Institute;</b> Colorado, January 25-28</li> <li>➤ <b>Industrial Reuse Conference;</b> Austin, February 1-3</li> <li>➤ <b>Australian Water Recycling Centre of Excellence Meeting;</b> Australia, February 8-12</li> <li>➤ <b>Board of Directors Meeting;</b> Las Vegas, February 18-20</li> <li>➤ <b>Webcast;</b> 09-02, January 8</li> </ul>
<ul style="list-style-type: none"> <li>➤ <b>Board of Directors Meeting Q2;</b> Huntington Beach, CA, May 4-5</li> <li>➤ <b>Water Week Fly In;</b> Washington, D.C., April 12-18</li> </ul>	<p>Q II April - June</p>	<ul style="list-style-type: none"> <li>➤ <b>WRRF Conference;</b> Huntington Beach, CA, May 4-5</li> <li>➤ <b>Board of Directors Meeting;</b> Huntington Beach, CA, May 4-5</li> </ul>
<ul style="list-style-type: none"> <li>➤ <b>WRA Symposium,</b> Seattle, WA, September 13-15</li> <li>➤ <b>Board of Directors Meeting Q3;</b> Seattle WA, September 13-15</li> </ul>	<p>Q III July - September</p>	<ul style="list-style-type: none"> <li>➤ <b>Board of Directors Meeting Q3;</b> Seattle, WA, September 13-15</li> </ul>
	<p>Q IV October – December</p>	



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## National Legislative Committee

- Standing Call
- 2<sup>nd</sup> Friday of the Month
- 11am PST/2pm EST
- Face to Face Meetings:
  - Monday, April 13<sup>th</sup> - to be held during Water Week Fly-In
  - Tuesday, September 15<sup>th</sup> - to be held during 30<sup>th</sup> WaterReuse Symposium
- Contact Kahlil Kettering ([kkettering@watereuse.org](mailto:kkettering@watereuse.org)) to get on the email list and receive notifications.

