

Infrastructure/Retrofit Working Group of the Blue Ribbon Panel on Water Sustainability

Meeting Minutes

May 12, 2010

Introductions

Chair Guy Carpenter called the meeting to order at 9:30 am. Attendees introduced themselves. Per the sign-in sheet, 18 people attended the meeting.

Approval of Minutes from Previous Meetings

Minutes of the April 7, 2010 meeting were approved. Maricopa County Environmental Services Department (MCESD) suggested a change to the first paragraph of the "Other Information Sharing" section of the April 21, 2010 meeting minutes, consisting of deletion of two sentences and replacement with text previously sent out by email by MCESD. The April 21, 2010 minutes were approved with the suggested changes.

Recap of Blue Ribbon Panel Meeting of May 7, 2010

Chair Carpenter reviewed the presentation he provided to the main Blue Ribbon Panel meeting of May 7, 2010, which updated the Panel on Infrastructure Working Group progress. As indicated in one of the PowerPoint slides, future Infrastructure Working Group meetings are scheduled for May 26 and June 2, 16, and 30, 2010. This will give one meeting to write the Interim Report, and then distribution to all of the draft for comment. Chair Carpenter discussed the content of the Interim Report, as outlined by Sandy Fabritz-Whitney at the May 7 Blue Ribbon Panel meeting. He stated that if there is not consensus on an issue, the Working Group's report can accommodate both a majority and minority point of view.

Other Information Sharing

1. Impacts of installation of a reclaimed water system in a retrofit situation were discussed. A key concern seems to be pipe separation requirements, as many jurisdictions have different requirements.
2. Chair Carpenter summarized the discussion on cross-cutting issues that took place at the main Blue Ribbon Panel meeting of May 7, 2010. He mentioned the suggestion of BRP Co-chair Benjamin Grumbles that "miles of purple pipe installed" be tracked to serve as a metric indicating the rate of adoption and growth of reclaimed water systems. Working group members discussed the pros and cons of developing and relying on such a metric.
3. It was mentioned that if new standards are adopted, there needs to be a transition period for implementation.
4. There was much discussion on how MAG, PAG, and other existing standards should be integrated into an overall State code for reclaimed water distribution systems. It was suggested that Working Group members look at ADEQ's sewage collection system criteria in the 2001 rule

(AAC R18-9-E301) to see how it was done then, as one possible way of approaching the problem. Questions were raised about how MAG or similar regionally-developed technical standards would be elevated into a State program, how consistency would be assured, and how such standards could be updated in a timely manner.

5. Chuck Graf passed out a handout summarizing SRP canal water sampling in the mid-1990s for fecal coliform and turbidity, as a basis for comparison with reclaimed water quality standards. The consensus among Working Group attendees appeared to be that a new study should be conducted to look at a select group of critical microbiological and chemical parameters in CAP, SRP, and reclaimed water, with sampling of all sources over the same period. This would provide a reliable comparison of natural versus reclaimed water quality.
6. It was suggested that there needs to be better information on treatment and O&M for microbial parasites relative to reclaimed water systems.
7. It was suggested that potential research needs identified by the Infrastructure Working Group members be compiled as the Working Group continues to meet, and that such a list be included in the Final Report. It was further suggested that all working groups compile such a list, which would comprise a recommended research agenda proposed by the Blue Ribbon Panel in its Final Report.
8. The balance between writing prescriptive versus performance standards was discussed. There was general support for ensuring that the standards are sufficiently performance-based to allow for new technology solutions. In this regard, it was suggested that there needs to be a process for proving new technology.
9. The term “multiple barriers” with respect to indirect potable reuse needs to be defined.
10. For use of recycled waters in small communities, needs and obstacles are different from larger communities. Small communities often must rely on outside funding sources or grants, and operational practices developed for larger systems may be inappropriate for smaller communities.

Reports by Subcommittees

A. Aquifer Recharge Subcommittee – Subcommittee Co-chair Gary Gin handed out a document for review and comment entitled “Recharge for Indirect Potable Reuse Issues Identified With Potential Solutions.” This document is included as Appendix 1 of these minutes. He suggested that a dialog be initiated with WaterReuse Arizona and the National Water Research Institute (NWRI) to address some of the identified technical issues described in the document. Gin recommended that attendees read the recent NWRI report, “Regulatory Aspects of Direct Potable Reuse in California,” which can be downloaded from the Web at <http://www.nwri-usa.org/pdfs/NWRIPaperDirectPotableReuse2010.pdf>. Although the report focuses on direct potable reuse, it has considerable useful information on indirect potable reuse and aquifer recharge in general. In particular, recharge into aquifers is scientifically

accepted as an environmental buffer that provides dilution, natural attenuation of contaminants, and retention time.

The question arose as to whether the Working Group should develop criteria for direct potable reuse. It was suggested, instead, that the Working Group craft issues and recommendations for indirect potable recharge first, then develop a path to direct potable reuse of reclaimed water.

It was suggested that a standardized list of PPCP analytes be developed in order to provide consistency, confidence, and a greater sense of public acceptance when planning, implementing, and operating recycled water projects.

B. Retrofit Subcommittee – Gary Gin, filling in for Chair Andy Terrey, passed out a handout for review and comment entitled “Core Requirements.” This handout listed 10 potential requirements for reclaimed water distribution systems in retrofit situations. It is included as Appendix 2 of these minutes.

Interim Report Framework

This agenda item was covered by Chair Carpenter under the Recap of the Blue Ribbon Panel topic.

Next Meeting

Chair Carpenter reiterated the dates of the next four Infrastructure/Retrofit Working Group meetings: May 26 and June 2, 16, and 30, 2010. Meetings will be held at ADEQ, 5th Floor Conference Room, from 9:30 – 11:30 am. Chair Carpenter noted that the next full Blue Ribbon Panel meeting will be on July 9, 2010, 10:00 am – 1:00 pm, at ADWR.

Adjourn

Chair Carpenter adjourned the meeting at 11:30 am.

Gaps, Proposed Methods to Fill Gaps, and Issues to Forward (Continuing)

The Working Group has identified “gaps” in the State of Arizona existing reclaimed water technical standards. These gaps are shown in Table 1 along with the date of the meeting where each gap was identified.

Table 1. Gaps in the State of Arizona Existing Reclaimed Water Technical Standards Identified by the Infrastructure/Retrofit Working Group			
No.	Description	Date of Meeting	Potential Source of Guidance/Applicability for Arizona
1	There is no guidance provided on retrofitting systems (e.g., converting an existing potable water line to deliver reclaimed water).	2-24-2010	
2	Current standards do not address groundwater augmentation that occurs when reclaimed water is recharged to the aquifer.	2-24-2010	

3	There is no guidance provided on distribution and use of reclaimed water inside buildings.	2-24-2010	Tucson Water
4	There is no guidance provided on using raw water to augment reclaimed water to meet seasonal demand fluctuations.	2-24-2010	
5	There is no guidance provided regarding using high quality reclaimed water to augment potable water supplies at water treatment plants during emergencies.	2-24-2010	
6	There is no guidance provided related to the protection of reclaimed water from the point of delivery to end users in order to preserve the quality of the water.	2-24-2010	
7	On-site issues are not addressed.	2-24-2010	State of Florida
8	There is no guidance provided related to operations and maintenance of reclaimed water conveyances.	2-24-2010	
9	There is no guidance provided for abandoning a reclaimed water line.	3-24-2010	
10	Should a General Aquifer Protection Permit (APP) be required to operate a reclaimed water distribution system?	3-24-2010	
11	Should certification/training for reclaimed water users be required?	3-24-2010	
12	There is more EPA guidance for drinking water treatment unit processes than for wastewater treatment unit processes.	4-7-2010	
13	There are no technical criteria for mixed, non-potable water supply systems (reclaimed water, CAP and canal water, pumped groundwater, etc.)	4-21-10	
14	There is no process for proving new technology.	5-12-10	

The Working Group has suggested several ways to fill in the gaps in the state of Arizona's existing reclaimed water technical standards. These suggestions are shown in Table 2 along with the date of the meeting where suggestion was made.

Table 2. Proposed Methods to fill in the Gaps in the State of Arizona Existing Reclaimed Water Technical Standards Identified by the Infrastructure/Retrofit Working Group		
No.	Description	Date of Meeting
1	Incorporate design standards in the regulatory rules.	2-24-2010
2	Consider aquifers as "infrastructure" for storing reclaimed water for future use.	2-24-2010
3	Review existing standards from other states or countries to determine applicability to the State of Arizona.	2-24-2010
4	Incorporate a visioning process that will help chart a course to achieve goals of the working group.	2-24-2010

5	Develop Best Management Practices (BMPs) for operations related to reclaimed water distribution.	3-24-2010
6	Develop a definition for “recycled” and/or “non-potable” water.	4-21-10
7	Study to sample and characterize critical microbial and chemical constituents in SRP, CAP, and reclaimed over the same period. (Research need)	5-12-10
8	Provide better information on treatment and O&M for microbial parasites relative to reclaimed water systems. (Research need)	5-12-10
9	Define “multiple barriers” with respect to indirect potable reuse.	5-12-10
10	Craft a recommendation to develop a path to accomplishing direct potable reuse of reclaimed water in Arizona.	5-12-10
11	Develop a standardized list of PPCP analytes for use by reclaimed and recycled water practitioners. (Research need)	5-12-10

The Working Group has identified several issues that are related to reclaimed water infrastructure but that also might be more appropriately addressed by another working group or at the Blue Ribbon Panel level. These issues are shown in Table 3 along with the date of the meeting where each issue was identified.

Table 3. Proposed Reclaimed Water Issues to be Forwarded to Another Working Group or the Blue Ribbon Panel		
No.	Description	Date of Meeting
1	Impact of water softening on reclaimed water quality with primary concern for increased salinity and TDS concentrations	2-24-2010
2	De-centralized use of reclaimed water resources	2-24-2010
3	Permitting issues related to jurisdictional boundaries that might result in potable water supplies being located too close to reclaimed water recharge projects	2-24-2010
4	Review the Type 3 Reuse (Agent) permit for a reclaimed water distribution utility in regards to risk to the utility versus the end user with respect to the use of reclaimed water “after the meter”	3-24-2010
5	Addressing the formation of Disinfection By-Products (DBPs) in reclaimed water	3-24-2010
6	Addressing reclaimed “water wheeling” whereby an intermediate party delivers water to another user (e.g., a golf course providing water from its lake to a HOA subdivision).	3-24-2010
7	All Working Groups should develop a list of research needs, to be included in the final Blue Ribbon Panel Report as a recommended research agenda.	5-12-10

Appendix 1

Recharge for Indirect Potable Reuse- Issues Identified with Potential Solutions:

- Streamline permitting process between: ADEQ, Maricopa County, and ADWR. In particular water quality monitoring and reporting. Why couldn't there be a centralized water quality database and consistent frequency of sampling amongst the various permits?
- Reconcile "primacy" issue regarding EPA UIC and ADEQ APP programs. Unsure how to reconcile at this time.
- To facilitate technical (water treatment technologies) and water quality issues (establishment of a higher class beyond A+- advanced treated water), an independent focus group should mediate between the permittee (municipality) and State/County agencies. For example the National Water Research Institute (NWRI) was instrumental in facilitating Orange County Water District's Groundwater Replenishment System (GWR System). The NWRI helped the State Agency (California Public Health Dept.) with recharge and treatment technologies and established a list of constituents of emerging concern (CECs) that should be sampled and monitored.
- To address technical and permitting process, adoption of technical guidelines should be developed to ensure a clear path of communication and data gathering between the permittee and State/County agencies. Specific quantitative analyses should be implemented such as tracer and residence time studies and controlled injection and recovery testing (e.g., OCWD- California Regulations Title 22, Sections 60320.010 and 60320.035).

Appendix 2

Core Requirements:

- Cross connections between the potable and reclaimed water systems are strictly prohibited. This includes connections between potable and reclaimed water source irrigation systems.
- All potable water services feeding a facility that uses reclaimed water shall be protected by a reduced pressure principle backflow preventer or air gap separation immediately after the water meter.
- Reclaimed water pipe must be clearly identified. Likewise, potable water pipe must be clearly identified and should be of a different material than the reclaimed water pipe.
- Reclaimed water hose bibs shall be clearly identified and secured from public use. Standard hose bibs for reclaimed water are prohibited.
- Potable water hose bibs shall be clearly identified. Potable water hose bibs shall be protected from backflow by means of a hose check valve or atmospheric vacuum breaker.
- The public shall be notified that non-potable water is being used. Signs must be prominently posted.
- Locations where water may be consumed, such as drinking water fountains, water stations and wash basins, shall be protected from sprinkler spray.
- Sprinkler systems shall be designed so that all watering can be done during normal hours when the facility is closed to the public.
- Sprinkler systems shall not spray onto premises other than the permitted facility.
- A 1-foot horizontal and 6-inch vertical separation shall be maintained between continuously pressurized potable and reclaimed waterlines. If it is not practical to maintain a separation, the potable waterline shall be protected by a sleeve.