

# Water Reuse and the Future: Affecting Public Perception through Social Marketing

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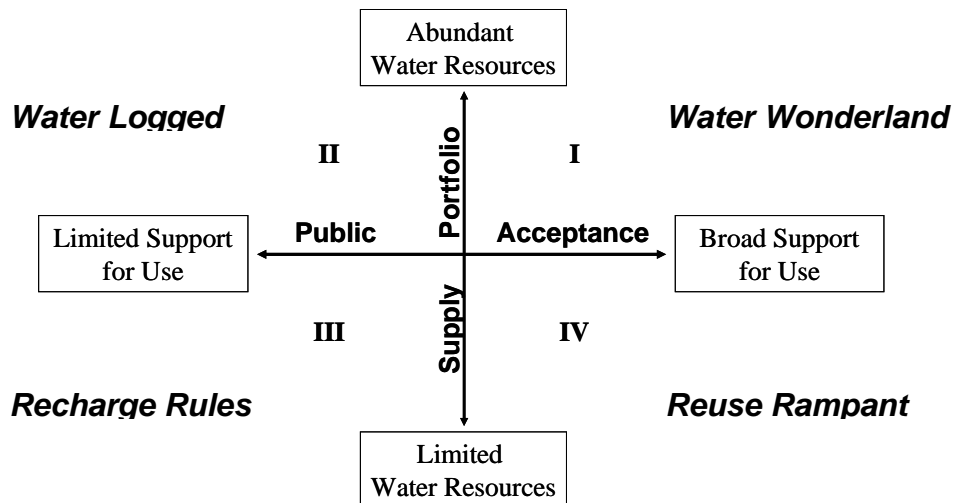
## Introduction

Drought and growth threaten sustainability of water supplies in the arid Southwest. However, reclaimed water can be used to supplement/augment potable, or drinking, water supplies, thereby saving future potable supplies without sacrificing current quality of life. Reclaimed water is also a more sustainable, drought-resistant supply of water. While water reuse technologies have been improving, there are still issues with public perception. The City of Peoria, Arizona, like many other cities, has recognized this and is actively working to increase public understanding and acceptance of water reuse.

## Master Planning for Reclaimed Water in the City of Peoria

The City of Peoria is actively planning to increase the amount of its supply that comes from reclaimed water. Reclaimed water will represent up to 33% of Peoria's future supply (Malcolm Pirnie, Inc., 2005). When Peoria began its water reuse master planning efforts, a central, guiding question was identified (Francis et al, 2000). How do we develop our water reuse system to best use reclaimed water as a component of a sustainable water resources portfolio? The city used Scenario Planning, which allows consideration of alternative futures (or scenarios) that are equally likely to play out in Peoria's future with respect to the role of water reclamation and reuse. Scenario Planning helps describe and anticipate future outcomes, and make choices today with an understanding of how things *might* turn out, without trying to predict the future outcomes. Some of the benefits of Scenario Planning include reducing risks in decision-making, helping to simplify complex issues, and creating alignment around a strategic plan.

As part of the Scenario Planning process, two critical uncertainties were identified – water supply portfolio and public acceptance. Water Supply Portfolio encompasses the critical uncertainties dealing with drought, availability of other water supplies, local water supply agencies and water rights, salinity, and participation in regional water management districts. Public Acceptance of water reuse encompasses the critical uncertainties dealing with safety, perception, support for use, political priorities, cost, and water quality, and it effectively determines how reclaimed water can be used in the service area. The two critical uncertainties became the axes of the scenario matrix, and the extreme conditions of each critical uncertainty became the end points of the axes. The figure below illustrates the scenario compass developed for Peoria and the four resulting future scenarios.



## **Social Marketing**

During Peoria's reuse master planning efforts, special interest was taken in the role public acceptance will play in the future use of reclaimed water. The city outlined an approach to create a reclaimed water public information strategy. The objective was to develop an effective public participation strategy and implement a plan to educate and inform reclaimed water users and the general public of water reuse. The approach lightly modeled social marketing principles with an emphasis on trying to understand the target audience's own perception of reclaimed water so the information strategy is hopefully more effective (Community Toolbox, 2007). While social marketing is usually used to change a behavior, Peoria is instead trying to influence people's thinking regarding reclaimed water.

At the core of this approach was focus group research, which occurred in two phases – focus groups with special interest groups and then focus groups with random citizens. None of the focus groups were designed to be statistically valid but to solicit rich qualitative information with which to create an effective public information strategy. Focus group research is supplemented by comparative research to take advantage of 'lessons learned' by others implementing reclaimed water programs.

The target groups for the information strategy have been identified as general citizens and possible reclaimed water user groups such as nurseries, schools, parks, golf courses, and others. The city would like to garner support from the general populace but especially from those in areas that have been planned for future direct reclaimed water use. There is also the understanding that the city must overcome people's fear of the "yuck" factor associated with reclaimed water. The persistence of drought will make water resources issues more relevant and the use of reclaimed water for supply augmentation more appealing. However, with little or no public support, it will be hard to effectively implement an expanded reclaimed water program.

## **Social Research**

To help create a public information strategy that would garner support for water reuse from Peoria's citizens, the city embarked on a series of meetings with special interest and random citizen focus groups. The goal was to identify the issues and concerns regarding the use of reclaimed water in Peoria.

### Special Interest Group Meetings

During the first phase, the city conducted four special interest group meetings to understand the issues and concerns of potential users of reclaimed water (Rozelle Group, Ltd., June 2005). Stakeholders were grouped according to similar interests: (1) golf course industry, nurseries, and the Arizona Department of Transportation (ADOT); (2) homebuilders and developers; (3) school district administration, school principals, and city parks; and (4) homeowner associations (HOA) and parent/teacher organizations (PTO). HOAs, school principals, and PTOs were invited if they were adjacent to a city park that was identified in the Water Reuse Master Plan as having a high likelihood of receiving reclaimed water some time in the future. Participants came to the meetings knowing that reclaimed water was the topic. They were sent a fact sheet containing basic information on reclaimed water along with their invitation to the focus group. The meetings also began with a brief presentation with background information on how the city is currently handling wastewater management, how reclaimed water is treated, what the city's water resource portfolio is comprised of, and how reclaimed water use is envisioned for the future.

### Random Citizen Groups

During the second phase, the city conducted four random citizen interest group meetings to gain additional insight into the general public's understanding of water reuse, common misperceptions, and concerns with water reuse. (Behavior Research Center, Inc., April 2006). Participants were pre-screened to ensure they were homeowners and water customers in the city of Peoria. A balance between male/female, number of people in the household, number of children in the household, age, and level of education was sought. Participants came to the meetings not knowing what the topic of discussion would be.

### Focus Group Results

The following is a combined analysis of the results from both sets of focus groups looking at people's experience or general understanding of reclaimed water, the issues and concerns they have about reclaimed water, and things the city should consider when planning how it will share information about reclaimed water. Where there are differences between the special interest groups and the random citizen groups, these are noted.

#### *Experience or General Understanding of Reclaimed Water*

Representatives from the development community, golf course industry, nurseries, City parks, and Arizona Department of Transportation had the most direct experience with reclaimed water, as was expected.

In both sets of focus groups, there were people who were either unclear or unsure about Peoria's water supply sources in general. Although there were participants in both sets of focus groups that exhibited some level of awareness of reclaimed water, there was great confusion as to exactly what reclaimed water is, especially in the random citizen groups. Some compared it to canal water, and many used the term gray water interchangeably with reclaimed water.

Participants in both sets of focus groups indicated that a better understanding of what reclaimed water is and the acknowledgment of its pros and cons would lead to acceptance of the use of reclaimed water. In the special interest focus groups, it was evident that experience with reclaimed water leads to greater understanding and to a second tier of issues. While most participants' main concern was health/safety, those who had more experience with reclaimed water (golf course, nursery, and ADOT representatives) tended to also be concerned about how and when reclaimed water would be delivered and had water quality questions related to salinity and heavy metals.

It is interesting to note that many of the participants in both sets of focus groups drew strong links between reclaimed water and water conservation, especially water conservation in response to drought. Developer and homebuilder representatives felt the use of reclaimed water would show they are taking the initiative to conserve water and could be used as a selling point. In the random citizen focus groups, support for the use of reclaimed water was stronger among those who felt there is a real need to conserve water.

#### *Issues and Concerns*

**Health and Safety** – In both sets of focus groups, the main health/safety concern was for children and direct contact with reclaimed water. There was the general feeling that adults would be able to heed warning signs better. The HOA, golf course, and developer representatives agreed that golfers are familiar with reclaimed water and would not be concerned about health impacts. Also, much concern was expressed for keeping the reclaimed water and potable water systems separate.

The homebuilder and developer representatives believed that proactive education and information can help dispel the perception of risk from exposure. Some school district representatives thought that new areas might be more open to reclaimed water on school grounds than areas that would have to retrofit.

**Economics** – The cost of reclaimed water came up during the special interest group meetings. There was concern that the cost of retrofitting old systems for reclaimed water would be too high, especially from the school district representative. Although school district representatives did say they would be willing to replace parts of the system such as sprinkler heads.

Even in areas where reclaimed water is planned in, the cost of reclaimed water must be lower than the cost of potable water to persuade people to use it. An HOA representative even said cost was more important than the environmental benefits. Developer, homebuilder, and nursery representatives would be very receptive to using reclaimed water if its cost was lower than potable water. In any case, cost recovery must occur quickly for reclaimed water to make business sense.

Although participants in the random focus groups did not mention the cost of reclaimed water, they did talk about the high cost of potable water. It is possible that they could be positively influenced if reclaimed water costs were lower than potable.

**Water Quality** – All groups voiced concerns about the quality of reclaimed water, specifically the presence of germs, diseases, and bacteria. In the special interest group meetings participants expressed concern about how testing and monitoring would be done and who would be responsible for the different parts of the delivery system (water reclamation facility, pipes, and delivery location). It is interesting to note that a second tier of water quality concerns was expressed by those who had more experience with reclaimed water. Representatives from golf courses, nurseries, and ADOT had questions about reclaimed water's salinity and heavy metal content and the effect it might have on their landscape plants.

**Implementation** – Because the random citizen meetings were set up differently, there were no comments related to the specifics of implementing reclaimed water. However, the special interest groups with their prior experience with reclaimed water and the possibility of becoming reclaimed water customers in the city of Peoria had several comments. Homebuilder and developer representatives emphasized that clearly written design manuals and standards should be available prior to implementation of a reclaimed water system. Nursery and golf course representatives were concerned about the timing of their reclaimed water allotment and noted that the city should consider daily and seasonal demand patterns when asking users to take reclaimed water. A comment from an ADOT representative was that responsibilities between the city and the reclaimed water users should be clearly defined as far as who manages backflow prevention and testing. HOA and school district representatives were primarily concerned about the cost and feasibility of retrofitting.

#### *Sharing Information With the Public*

Comments made during the focus group meetings give Peoria ideas on not only what kinds of information should be shared with the public on reclaimed water, but how to share it and possible barriers to getting the city's messages across to the public. There was definitely the feeling that public information and education would be critical to the success of reclaimed water.

Participants in the random citizen group meetings indicated that the technical details of reclaimed water are not as important to them. Instead, they want assurance that the reclaimed water and potable water systems are separate and that very clear testing procedures are in place. They also prefer the city give them "straight" information on reclaimed water, nothing "sugar coated." On the other hand, many special interest group participants indicated that more technical information should be available for those who understand it. They want more information pertaining to water quality and management of the supply.

Special interest group participants had many ideas on how the city should share information on reclaimed water. They suggested proactive public education that is direct and utilizes multiple ways to engage the public. However, they also cautioned against over-promotion of the issue, which could cause people to become concerned. Special interest group participants advocated the need for a long-term education strategy and staff that is knowledgeable about water conservation and reclaimed water. They suggested that the reclaimed water message be delivered by a combination of the city and a respected third-party (either a state or regional entity). Water Use It Wisely was cited as a good example of a regional approach.

Homebuilder and developer representatives recommended presenting reclaimed water as part of the overall water use and conservation story. Homebuilder representatives wanted to be able to reassure new homebuyers they are taking the initiative to conserve through the use of reclaimed water. Although they support the effort, a school district representative said the school districts would not take a lead role in promoting reclaimed water.

Most possible barriers to a successful reclaimed water information strategy came from the random citizen meetings and were related to water conservation, which has been identified as being closely related to the use of reclaimed water in people's minds. People's opinions are influenced by what they see around them. It was very clear that there is the perception the city is not doing enough to promote water

conservation. Participants mentioned wanting more guidance for those who are voluntarily trying to save water and some even recommended the city convey urgency through ordinances. There was also the perception that the city's water supply situation must be good because no cutbacks on water use are being imposed. Hence, if there is no need for water conservation, there is no need to use reclaimed water.

People want the city to lead by example. Participants in the random citizen meetings pointed their fingers at the city and developers for allowing population growth that could lead to mandatory water conservation in the future. People also see man-made lakes and waterfalls as wasteful and wonder why they should conserve water. Interesting to note is that many participants have an inner conflict because they see a need to conserve water but they also believe they have a "right" to grass.

### **Comparative Research**

Research into the experiences of other municipalities and water providers that have implemented reclaimed water programs has proven to be helpful. While each situation is unique, much can be learned not only from the difficulties others have encountered but also from how they overcame obstacles to implement successful reclaimed water programs. A brief survey of water reclamation programs across the nation reveals that much has been done to put reclaimed water to good use. Some recurring themes emerge when looking at specific issues and how to garner support for the use of reclaimed water.

There is a broad range of what the general public sees as negative aspects to the use of reclaimed water that other providers have had to deal with. The most common concern is for safety and the health effects of germs, bacteria, and traces of prescription medicines. Misunderstanding of what reclaimed water is and the process it has undergone to be reclaimed leads to concerns of the safety of reclaimed water. This in turn can lead to perceptions that are hard to overcome, such as the "toilet to tap" moniker, which addresses the "yuck" factor associated with reclaimed water.

Often related to the safety of reclaimed water is the concern that certain segments of the population are being asked to take this additional supply of water. It becomes a question of equity and the perception that certain groups are being forced to take this water. A separate negative aspect to the use of reclaimed water is high installation costs to add a reclaimed water system to an existing area or to retrofit an existing irrigation system to take reclaimed water.

The approaches taken by various municipalities and water providers differ in their details, but there are several common threads. The easiest way to integrate reclaimed water into a community is to plan for it and to start using it early. This directly addresses the retrofit cost concerns and may help to make the use of reclaimed water more acceptable. Community outreach is always important – a consistent message being sent out and technical information from a reliable source. Understandable information about reclaimed water can help prevent the common misperceptions. As with all campaigns, focusing on the youth can help garner support not only from future generations of decision makers but also from current parents.

An often used strategy is to focus on the benefits of using reclaimed water. Some oft cited benefits of using reclaimed water include protecting the environment, saving drinking water supplies, and reducing the use of groundwater. Positive qualities of reclaimed water mentioned include that it is a drought-proof supply of water and that it is locally controlled. Another benefit to the community is a reduced or delayed need to expand potable water treatment plants. Another common strategy is to create a perception of improvement. For example, describing reclaimed water as showers to flowers instead of toilet to tap.

More practical strategies to gain support for the use of reclaimed water include making it cheaper than potable water so that its use makes economic sense. Another way to increase acceptance of reclaimed water, especially at the beginning of a program, is to find good uses for it that may not be as controversial. Things such as golf course irrigation, industrial processes, and even interior commercial use (such as toilet flushing) are good ways to build confidence and familiarity with reclaimed water by implementing it in less 'personal' spaces.

## **Reclaimed Water Public Information Strategy**

While much rich qualitative public information was garnered from the two sets of focus groups, some recurring themes can be pulled from the analysis that Peoria will use in establishing and implementing a continuing public information strategy. The following is a list of the strongest, most relevant points made by participants during the focus group meetings. It is interesting to note how these points reflect information gleaned from the comparative research.

- Clarify not only what reclaimed water is (vs. gray water) but increase people's knowledge of the potable water supply to ensure a clear understanding of the overall water supply picture.
- Reinforce the safety of the reclaimed water system design, water quality testing, and water quality monitoring to the public.
- The cost of reclaimed water must be low enough to persuade possible users like golf courses, nurseries, homebuilders, and developers to take advantage of it.
- Things like standards, delivery scheduling, and quality control responsibilities must be clearly defined before implementing reclaimed water use.
- The reclaimed water message should be presented as part of the larger water supply and water conservation story.
- The city must make a concerted, visible effort to lead its citizens by example when it comes to water conservation.
- The city must present clear, understandable, honest information about reclaimed water to its citizens.

The results of the focus group process and comparative research are playing a role in helping Peoria develop the key public information messages forming the core of the city's reclaimed water public information strategy. The city will focus on the safety of reclaimed water, the fact that the reclaimed water and potable water systems are completely separate, how reclaimed water is a drought resistant supply, and making the connection between water conservation and reclaimed water. More technical information will be made available to potential users who may express interest in the details of water quality and water delivery. It will be important to frame the use of reclaimed water in Peoria as a win-win situation for individuals and the community as a whole.

Water conservation staff will head up the effort to deliver reclaimed water information to the public. Initial thoughts on how specifically to do this include using newspaper ads, community events, and presentations to community groups to get out simple messages. More detailed information will be made available through brochures created to address citizens' concerns about reclaimed water and the benefits to expanding Peoria's reclaimed water system.

To ensure that a consistent message is being forwarded by the city, it will be important to define a common vision for reclaimed water education across the various departments in the city. Appropriate city leaders and staff will need to be briefed on the details of the public information strategy. A common understanding of the future of water reuse in Peoria is necessary to ensure that the city promotes a common vision, goals, and objectives for reclaimed water use within its city limits.

It will also be useful to decide how the city will address and mitigate opposition to the use of reclaimed water. Through the focus group process, some potential partners within the community were identified. These partners can be used as community opinion leaders to help build support for the use of reclaimed water.

## **Conclusions**

Complexity and uncertainty led the City of Peoria to use Scenario Planning, a non-traditional planning approach, as a tool to help it during its water reuse planning efforts. During planning, public acceptance of the use of reclaimed water was identified as one of two critical uncertainties about the future of water

reuse in the city. In order to better understand the issue of public acceptance of reclaimed water, Peoria embarked on a series of meetings with special interest and random citizen focus groups. The focus group research yielded much rich qualitative information. Recurring themes pulled from the focus group analysis and comparative research into other reclaimed water programs across the country are being used to establish and implement the city's continuing public information strategy. Both the research results and the consequent planning steps will be informative to other communities contemplating implementation of a water reuse program.

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