

Turning the tide of public perception

Public acceptance of direct potable reuse is the primary goal of a WateReuse Research Foundation grant (WRRF 13-02) that funds the development of strategic communication plans. **Barry Dugan** of Data Instincts explains.

Direct potable reuse is acknowledged by many in the water reuse industry as the latest frontier for creating new and reliable sources of drinking water. Water treatment technology exists to safely produce advanced treated water, which can supplement the water portfolios of many communities. Due to proven and reliable treatment technology, water industry leaders believe direct potable reuse is the next logical step to ensure that California — as well as other states in the United States and countries such as Australia — have access to this viable local water supply.

Experience has shown, however, that public acceptance is one of the primary challenges facing potable reuse. Drinking water processed from recent sewage has been a difficult hurdle for utilities to clear. Despite recommendations to focus on water quality and not the source, some consumers cannot overcome the “yuck factor” associated with potable reuse.

A group of engineers, scientists, academics, and communication specialists are attempting to change that. Their efforts received a big boost recently, with a WateReuse Research Foundation grant to develop a “Model Communication Plan for Advancing DPR (direct potable reuse) Acceptance.” The grant funds the first of a three-phase approach to achieving acceptance of direct potable reuse in California. The Foundation-supported phase one will involve developing a strategic communication plan. Phase two will include development of messaging material and methods, while phase three will include implementation, evaluation, and refinement of the plan.

“This research project is part of a larger component of studies that are under way,” said Mark

Millan, one of three principal investigators for the project, and principal of Data Instincts — a public outreach consultancy in Northern California. “This is not a stand-alone project. It’s going along with several other technical research projects that are under way that look at new treatment and monitoring processes.”

Researchers in Australia, through the Australian Water Recycling Centre of Excellence, are embarking on a similar public acceptance effort known as the National Demonstration, Education and Engagement Program (NDEEP).

Building DPR awareness and acceptance

The goal of the research project is to advance acceptance of potable reuse projects by building awareness and education about existing and planned potable reuse projects, and fostering an

understanding of the need to continue water supply expansion. “This plan is needed because the technology is falling into place,” said Millan. “The need is there, and often the biggest hurdle to overcome has been public acceptance.”

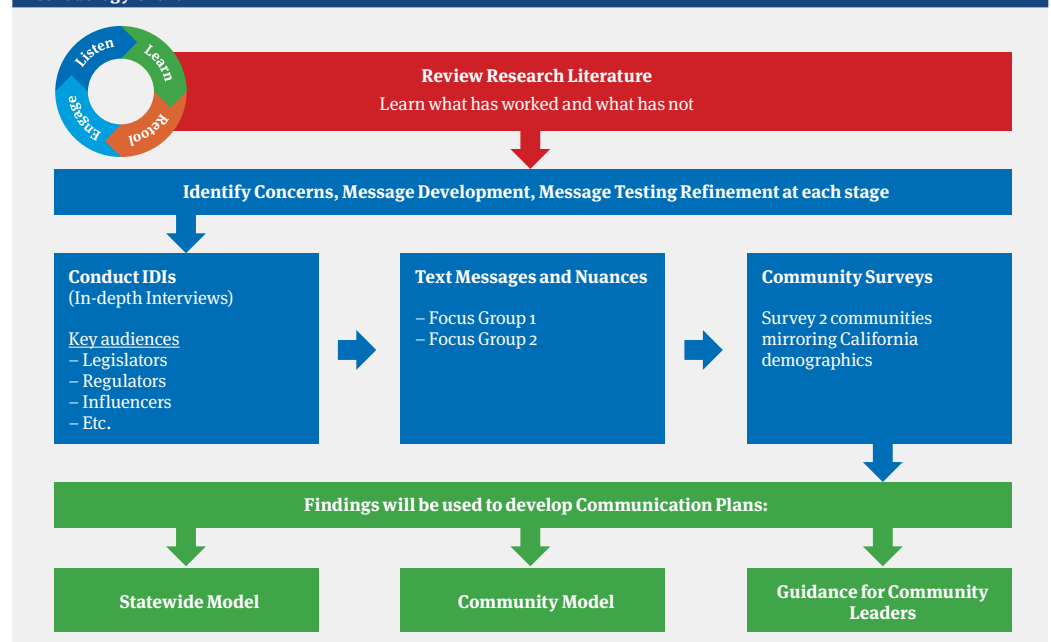
A key element of the project is to listen to concerns and develop messaging materials that foster understanding about potable reuse (videos, ads, terminology, breakthrough ideas) that can be tested in focus groups and surveys in two model communities (the City of San Diego and the service area of the Santa Clara Valley Water District). The project team will also conduct in-depth interviews statewide with legislators, public health officials, and special interests groups. The findings from the focus groups, surveys and interviews will then be used to inform two documents: a statewide communication plan and a local

communication plan for advancing potable reuse.

The written communication plans for public outreach will build upon previous research of public perceptions. “We have reached out to dozens of utilities in Texas, California, Florida, Arizona, Georgia, and Australia, and have received copies of surveys that have already been conducted,” said Patricia Tennyson, the second principal investigator for the project, and executive vice president at Katz & Associates — a California-based communication firm. “Previous studies have shown, for example, that as people learn about the reliability and effectiveness of treatment methods, they become more comfortable with potable reuse.”

The introduction of highly treated reclaimed water into the potable water supply system is not a new idea. Seven million Californians are connected to

Methodology Chart



4 Phases of Developing Communication Plans for 13-02

1

Conduct and develop literature review

Establish goals & objectives for the research project – have PAC approve

Conduct in-depth interviews (IDIs) with utilities considering Potable Reuse projects

Draft IDI questions for state legislators and leaders

Draft IDI questions for health officials and special interests

2

Develop criteria for selecting a model community – have PAC approve

Develop survey questions

Develop focus group questions

Develop initial messaging strategies for testing in focus groups: videos, ads, terminology, break through ideas

3

Pac Workshop #1 – Convey findings to date and draft questions to the various audiences

Propose specific model communities to conduct studies in – recommend 2 to PAC

Conduct IDI with legislators, health officials, and special interests

Conduct actual public surveys and focus groups

Consolidate results from all the above

4

Pac Workshop #2 – Convey results to PAC and reach consensus on conclusions and recommendations

Develop statewide communication plan

Develop local communication plan

Develop guidance for community leaders

systems that have indirect potable reuse as a component of their water supply, while other US locations such as El Paso, Texas, and the Upper Occoquan Service Authority in Northern Virginia also have successful indirect potable reuse programs in place. But taking the next step to direct potable reuse will require a strategic communication plan that has been carefully designed and tested in order to shift the public perception of what has infamously been referred to as “toilet to tap.”

“We need to digest and apply the lessons from other successful projects, like the GWRS (Orange County), San Diego’s demonstration project, Aurora’s Prairie Water Project, and the NDEEP project under way in Australia,” said Tennyson. “We want to learn what worked and what didn’t. What have these projects learned about outreach efforts, and from surveys, interviews, and focus groups? And what can we apply to this project?”

Putting recycled water to a higher use

Direct potable reuse introduces highly treated recycled water directly into the potable water supply distribution system downstream of a water treatment plant, or into the raw water supply immediately upstream of a water treatment plant. While identical in many aspects to indirect potable reuse with full advanced treatment, direct potable reuse eliminates the passage of the treated water through an environmental buffer, such as a groundwater aquifer or a reservoir, and passes directly into the drinking water system instead.

Water-reuse leaders believe that



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Dr. Dave Smith, Managing Director of WaterReuse California

direct potable reuse is necessary to realize the full potential of recycled water in California. “We can’t use all of the available recycled water in California through existing means,” said Dr. Dave Smith, managing director of WaterReuse California. “The non-potable projects that are important in some communities will continue to be important. IPR (indirect potable reuse) opportunities are important for some communities, but not every community has a groundwater basin that can be used, or if they do it might be contaminated.”

By clearing the way for direct potable reuse, the state could put more of its recycled water to beneficial uses and meet its goals for water reuse. “We need DPR as an additional tool in our toolbox,”

said Smith, “because we as a state are discharging 3.5-million acre-feet per year of water into the ocean. That is water that is only being used once.” California’s goal to increase water recycling by 2-million acre-feet per year, is more likely met with the option of direct potable reuse, explained Smith, adding that the Governor agrees.

In October 2013, California Governor Jerry Brown signed a bill requiring the Department of Public Health and the State Water Resources Control Board to investigate the feasibility of developing uniform water recycling criteria for direct potable reuse by September 2016. “This information (about direct potable reuse) is past due,” Brown wrote in his signing letter. “California needs more high quality water and recycling is key to getting there.”

Technology to ensure public confidence

Much of the current direct potable reuse research focuses on technical issues, to provide information to regulators and health officials who will craft new regulations. “The technology is there,” said Smith. “The question is how to apply that technology so the public health is protected. That information is necessary to create the regulations to establish how to safely use this resource.”

The third principal investigator for the project is Dr. Shane Snyder, a University of Arizona engineering professor. He is also the co-director of the Arizona Laboratory for Emerging Contaminants. For over 15 years, Snyder’s research focused on the identification, fate, and health relevance of emerging water pollutants. “I don’t think

there is any question about the treatment process,” he said. “It has been proven that you can take municipal wastewater and treat it to extremely high purities. The missing link is really the perception.”

Addressing that missing link will require a clear plan to address the communication needs of all the stakeholders. “Some communities are ready for DPR,” he said. “San Diego is considering using it. But not every community is there yet.” He believes that the industry needs regulatory authority and a clear communication plan. The Foundation’s approach will allow for both, according to Snyder.

While scientific explanations are not always effective in addressing emotional responses to potable reuse, Snyder is interested in the public’s response to the latest research into real-time sensor technology. “I am very curious to know if the public would feel more confident if they knew there was online, continuous monitoring that watches the system and could alert operators if something was operating outside the guidelines,” he said. “When you look at this thing from a high elevation, the only science argument you are going to get is this one of time.” When a groundwater aquifer or a reservoir system is used in indirect potable reuse, there is time to react, he explained. With direct potable reuse connected directly to a distribution system, if something goes wrong, the argument he often hears is that there is no time to react. According to Snyder, if there was an anomaly these online monitoring sensors would shut the system down or divert the water.

“It’s extremely important to

Public Acceptance

understand what the public trusts, and what they need to feel comfortable, and what they don't trust," Snyder said. Understanding this will be critical in the success of the project.

Team effort for developing communication plans

This first phase of the three-phase effort at gaining public acceptance will require a team effort from numerous sources and disciplines. Developing the US\$560,000 communication plan (includes cash and in-kind services) involves the participation of 37 individuals, who represent three non-profits, five universities, nine engineering firms, and 14 utilities. Principal investigators Mark Millan, Patricia Tennyson, and Dr. Shane Snyder are joined by a group of science, technical, communication, environmental, and utility advisors with extensive experience and background. The project began in December 2013, and is scheduled for completion by August 2014.

The phase-one project, divided into four steps:

- Literature review and interviews with utilities (that are considering, implementing,

or already have potable reuse projects)

- Develop questions that will be used in interviews and focus groups
- Conduct interviews with agencies, legislators, and health officials – and then conduct public surveys and focus groups
- Use the survey and focus group findings to inform statewide and local communication plans and guidance for community leaders

Millan explains that the literature review and utility interviews will provide the basis for formulating questions for the second step. The questions will establish the first set of in-depth interviews with various agencies. Results of the agency interviews will provide information and insight into the interviews with legislators, which will in turn influence the interviews with health officials, which in turn will guide questions to community stakeholders and the public.

"The information we receive from these groups of people will be unique," said Millan. "And every time we are conducting these interviews, we are listening, learning, retooling, and engaging.

Each data set is going to feed into the next data set. We get clues or direction from which new questions and concepts may arise and need to be vetted. All of that information is then used to formulate the statewide and local communication plans, and a document we are developing to provide guidance for how utilities can engage community leaders."

The end product will be a how-to-guide for potable reuse communications – locally and at the statewide level. "It will be useful for those communities that seriously need to consider potable reuse as a water supply – this may be their only viable solution," Tennyson said.

While the Foundation project offers a three-phase approach to achieving acceptance of potable reuse, it is part of a larger California initiative of advancing potable reuse to address water-supply challenges worldwide. That initiative includes outreach, education, and technical research. Rich Nagel, general manager of the West Basin Municipal Water District, who is among the water leaders advancing that initiative, said, "The DPR initiative that California WateReuse and the

WateReuse Research Foundation have partnered on has as its goal to remove barriers so that recycled water can be used safely for potable reuse."

Nagel, who is the current chair of the WateReuse Research Foundation, said the barriers include defining the standards that must be met for DPR to be considered safe by drinking water regulators and other stakeholders, including the public. "We need to communicate to the consumer what we know about the safety of DPR and its importance in meeting our water supply challenges," said Nagel. "If we can do that, it will go a long way in establishing potable reuse as the viable water supply option we believe it is."

Author's Note

Data Instincts' Associate Barry Dugan has more than 30 years of experience in journalism and communications, including reporting and analysis on a variety of environmental subjects, with a particular interest in water supply, water reuse, politics and government planning. For more information, contact the author by email at: Dugan@DataInstincts.com.

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