Outreach and Engagement

A Resource Management Strategy of the California Water Plan

California Department of Water Resources

July 29, 2016

Table of Contents

Outreach and Engagement **3**
Potential Benefits 8
Public Involvement 8
Collaborative Policy-Making 8
Youth Education 9
Climate Change 10
Adaptation and Mitigation 10
Potential Costs 11
Major Implementation Issues 12
Widespread Lack of Understanding of Water Management 12
Complex Governance Structure 12
The Public Underestimates Risk 12
Diverse Communities Require Diverse Outreach 13
Water Managers May Not Want to Use Outreach and Engagement 13
Poorly Designed Public Processes 14
A Flood of Outreach and Engagement Materials 14
Distrust of Government and Science 14
Victims of Success 15
Water Policy is Genuinely Complex 15
Recommendations 15
References 16
References Cited 16
Additional References 17

Tables

Table 1 Levels of Outreach and Engagement 6

Boxes

Box 1 Recommendation 9 from *Update 2009*, Volume 1, Chapter 2 5
Box 2 Mosquito Control 9

Acronyms and Abbreviations

BMP	best management practice
CEQA	California Environmental Quality Act
EEI	Education and the Environment Initiative
EIR	environmental impact report
EPA	U.S. Environmental Protection Agency
GHG	greenhouse gas
IAP2	International Association of Public Participation
IRWM	integrated regional water management
TMDL	total maximum daily load
UCCE	University of California Cooperative Extension
Update 2009	*California Water Plan Update 2009*

Outreach and Engagement

Outreach and engagement for water management in California is use of tools and practices by water agencies to facilitate contributions by public individuals and groups toward good water management outcomes. These contributions include:

- Providing insight to decision-makers on the best approaches for water management.
- Adopting water-wise practices.
- Supporting activities that result in beneficial water management outcomes.
- Promoting collaboration and interdisciplinary approaches to solving problems, as well as resolving conflicts and addressing multiple interests and needs.
- Ensuring access to water management information and decision-making.

For more than a century, California has benefitted from the exceptional technical knowledge used to select and build California's significant water infrastructure. Water managers have relied on engineering expertise to achieve positive water outcomes and resolve problems. This approach worked well for meeting single-purpose engineering goals, which have supported a growing economy. Even so, some unintended consequences have been revealed. Over time, some water management projects have altered and degraded ecosystems and/or created social injustices as unintended byproducts. Because the water management profession remains primarily a technical discipline, and many agency staff are educated in engineering, economics, or law, these staff see their primary task as managing the physical system. Only later do they engage the public as a way of solving problems or developing policies and programs.

As the demands on water management systems have increased and understanding of the complexity of the water systems has grown, the need for engineers and technical experts to engage others in achieving optimum results has become more apparent. Water managers' new respect for the complexity of the ecosystems from which water projects draw has made them realize the need to access a broader range of expertise. Potential sources of expertise range from the close local knowledge of long-time residents of the area being altered by a water project (such as oral histories from local farms or recollections of historic streams, springs, and wells) to university scientists in disciplines (such as ecology) that have not always participated in water development and management. In addition, water managers are now developing new sophistication about the ways they can serve their communities. This goes beyond the traditional engineering approaches by bringing in expertise from other disciplines, such as economics, public health, and land use planning.

In the past few decades, citizens were given new legal tools that allow them to block water management projects that conflict with their environmental interests. Both the California Environmental Quality Act (CEQA) and the Clean Water Act have citizen suit provisions. Through the referendum process, voters passed Proposition 218 in 1996, which gives ratepayers a way to protest rate increases. Since the 2000s, increasing Internet use and the advent of social media have made organizing people and transferring information easier than ever. With these broad societal changes, water managers have found that an approach developed without consulting the public can suddenly become a focus of negative attention, as interest groups draw attention to aspects of a project, program, or policy they oppose. The most productive means of avoiding project-derailing protests or lawsuits is to use community outreach and engagement to develop projects that address multiple interests from the project's outset and get community buy-in for the goals of the project. Collaborative development of new programs or policies

may clarify or make explicit short- and long-term community interests, and ways to meet both or make trade-offs.

California Water Plan Update 2009 (Update 2009) emphasized the need for outreach and engagement (see Box 1). This direction has been confirmed by the Legislature and the Executive Branch through requirements for open and transparent decision-making and access to public records; specific instructions to convene advisory committees and conduct public outreach; and legal requirements for notification and hearings on key topics, such as prescribed in CEQA. At the federal level, the National Pollutant Discharge Elimination System has regulatory requirements for education and outreach regarding non-point-source pollution. The U.S. Environmental Protection Agency (EPA) states:

> It takes individual behavior change and proper practices to control such pollution. Therefore, it is important to make the public sufficiently aware and concerned about the significance of their behavior for stormwater pollution, through information and education, that they change improper behaviors.
>
> Phase II MS 4s are required to educate their community on the pollution potential of common activities, and increase awareness of the direct links between land activities, rainfall-runoff, storm drains, and their local water resources. Most importantly the requirement is to give the public clear guidance on steps and specific actions that they can take to reduce their stormwater pollution-potential.

In addition to reaching the broader public, outreach and engagement can also target specific fields or professionals. The California Dairy Quality Assurance Program and the University of California Cooperative Extension (UCCE)conduct outreach and education on the Central Valley's General Order for Existing Milk Cow Dairies. The Central Valley Water Quality Control Board attributes the successful implementation of the order partly to the education program (California Dairy Research Foundation 2013). Another program that is successful is the Ranch Water Quality Planning Short Course, which promotes the California Rangeland Water Quality Management Plan (State Water Resources Control Board 1995). In the San Francisco Bay Area, this program was used to implement a pathogen total maximum daily load (TMDL) on Tomales Bay, where the impairment was at least partially a consequence of grazing activities. An updated assessment of the program is on San Francisco Bay Regional Water Quality Control Board's Web site: http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/TMDLs/tomalesbaypathogenstmdl.shtml.

At the state level, CEQA has been strengthened to try to assure that public participation is not just a formality, but that it is carried out in a meaningful way. When adopting CEQA, the Legislature found that "Every citizen has a responsibility to contribute to the preservation and enhancement of the environment" (Public Resources Code, Section 2100[e]).

Box 1 Recommendation 9 from *Update 2009*, Volume 1, Chapter 2

9. California should increase public understanding and awareness of where water comes from, as well as the value and importance of water, water quality, and water conservation to people, ecosystems, and California's economy.

Water is a limited resource and State government needs to do more to assist water agencies, local governments, and other partners, such as tribes and non-governmental organizations, by developing and disseminating information about the importance of water issues, including water supply, water quality, and ecosystem health. Despite experiencing significant droughts and floods, Californians are not sufficiently aware of the critical water issues confronting them. It is the responsibility of State government to help the public understand the importance of efficient water use, how to protect water quality, how their actions can benefit or harm the watersheds from which they receive their water, and the watersheds in which they live, play, and work.

The California Department of Water Resources and other State agencies should make public outreach and education a priority and achieve efficient dissemination of information by forming partnerships with those experienced in water and resource education and media. Outreach should include high-quality, balanced water information, including programs that are part of elementary school education. With such education, Californians will have a better understanding of where their water comes from; the value and importance of water; and the challenges and opportunities to ensure the coequal goals of water supply, quality, and ecosystem health. The public will also have a better understanding of the benefits, costs, and impacts of the resource management strategies, especially water conservation and water use efficiency, both of which must become a public ethic.

The overall goal of water education is to develop increasingly knowledgeable citizens who can participate in public discussion effectively and debate water issues. Good contextual understanding improves people's ability to examine and evaluate the information presented and perceive when information is not presented. With a basic understanding of water, residents respond to specific and technical issues, such as the need to develop water supplies or wastewater treatment facilities, the costs and benefits of conservation, the dangers associated with leaking contaminants, the risks posed by poor water quality, and the costs and benefits of river restoration or flood control. With education and information, people will form their opinions based on data and information and make informed choices about supporting a water management program.

The degree of engagement and the methods used are tied to the goals of the effort and the individuals involved. Outreach and engagement efforts range from informing and educating to empowering, and the tools used mirror the goals of engagement. The International Association of Public Participation (IAP2) provides a broadly accepted framework on the levels of engagement, as shown in Table 1.

The EPA and others have also developed agency-specific frameworks, and these are widely used by public participation professionals. Similar frameworks and tools exist for water educators and public relations professionals.

A successful outreach and engagement strategy must be:

- Relevant — contributes to the missions, goals, and objectives of partner organizations.
- Focused — establishes goals that are measurable, achievable, and targeted toward improving social, economic, environmental, or civic conditions.
- Scale-appropriate — creates designs at local, state, multi-state, or national scales that effectively address the program's focus.
- Innovative — integrates research findings and collegial knowledge and experience.
- Collaborative — cultivates and nurtures authentic and appropriately diverse partnerships.

Table 1 Levels of Outreach and Engagement

Level	Goal	Public Expectation	Tools
Inform, Educate	Provide information about problems, solutions, alternatives, opportunities, and solutions related to water in California.	Water managers will provide balanced and objective information to the public.	• Web sites • Fact sheets • Open houses/town hall meetings • E-News • Newsletters/Alerts • Public libraries, designated (gov't) section, provide webinar facilities in libraries
Consult	Obtain public feedback on analysis, alternatives, and/or decisions regarding water in California.	Water managers will provide information, listen, and acknowledge public concerns and aspirations, and provide feedback on how public input influenced the decision.	• Public comment • Focus groups • Surveys • Public meetings • Social media participation
Involve	Work with the public to ensure public concerns and aspirations are understood, and considered by water managers.	Water managers will work to ensure that public input informs alternatives and provide feedback on how public input influenced the decision.	• Workshops/town hall meetings • Deliberative polling • Social media/webinars
Collaborate	Partner with the public to develop alternatives and identify preferred solutions for water in California.	Water managers will ask for advice and ideas from the public, and will try to include public input when making decisions.	• Advisory committees • Caucuses • Include plan alternatives in EIR processes
Empower	Provide the public the opportunity to make decisions related to water in California.	Water managers will implement or support public decisions.	• Convene forums as requested, when possible • Support local and regional action

Notes:

EIR = environmental impact report

The information in this table was taken from the Web page "IAP2 Spectrum of Public Participation" (International Association of Public Participation 2007).

- Factually and Scientifically Sound — bases strategy on integrated or incorporated knowledge and methods derived from research, and brings together the relevant components of the knowledge system (i.e., research, education, and application) around the problem or issue at stake.
- Adaptive — develops and implements continuous feedback and improvement strategies that include strong program planning and evaluation components, and exchanges information about processes, outputs, and outcomes with colleagues at local, state, multi-state, and national levels.
- Visible — interprets processes, outputs, and outcomes in a format that is understandable and accessible to partners and decision-makers.
- Effective — achieves outcomes that meet intended and unanticipated program objectives.
- Sustainable — develops and implements mechanisms to sustain the production of impacts over time, as appropriate to the duration and priority of a public need.
- Measurable — creates a difference that can be tracked and measured.

Public relations professionals help refine important messages about water so the messages are useful to a broad audience. These professionals also assist in preparing informational materials and placing promotional messages on key topics by using all forms of traditional and social media. Another role is to assist with critical outreach on such topics as flood risk notifications to people who live in areas next to substandard levees. These professionals also routinely provide information on topics related to the need for investment in water systems.

Non-profit organizations can connect water managers to specific communities within the broader public. California has many diverse cultural communities; some are also economically disadvantaged. Directly addressing and connecting with people within these cultures may require different skills than when addressing the general public. Such communities may have their own media or special emphases that are not widely known outside those communities. Some professionals at non-profit organizations or within water agencies have focused on developing connections within a cultural community and learned how to craft messages and build processes that will bring members of a culturally distinct group into water management decisions.

Outreach and engagement professionals use opinion polling and academic research to learn more about what is important to key audiences and to identify the best practices for serving those audiences and stakeholders. Opinion polling can measure whether outreach campaigns were able to change beliefs or behaviors by polling the public before and after the campaign, or to determine what factors influence water consumption behavior (such as drought features in the media/news). Water educators also provide continuing education for water professionals in formal educational settings and through seminars, conferences, and events. Academic researchers study water conflicts to identify the sources of conflicts and underlying attitudes, and evaluate whether processes undertaken to reduce conflict are effective.

There has been significant success using outreach and engagement to ask individuals to change simple habits, such as turning off the water when brushing teeth, installing more efficient shower heads, or altering lawn-watering practices. Outreach and engagement has also been essential in creating a better understanding of flood risk in California, the importance of not dumping contaminants down storm drains, and the need to maintain and invest in water systems. For all its success, outreach and engagement could be used more broadly, delivered more efficiently, target and reach key audiences better, and better support Californians' understanding of critical water issues. For example, the general public still has a limited understanding about the watersheds they live in, where the water they use comes from and where it goes when they have finished with it, and the degree of their exposure to flood risk. Likewise, while managers may know how water in their service area is delivered in the aggregate, they may have a poor sense of how their constituents perceive water, what constituents' topmost water-use priorities are, how much individual willingness exists to pay for water, what the level of individual preparation is for water emergencies, and many other facets of personal water use.

Outreach and engagement has contributed to broader use of cross-disciplinary groups to resolve water issues and has been the foundation of some significant water policy decisions, as multiple interests have worked collaboratively to solve problems. Integrated regional water management (IRWM) is now the policy direction of the State. To qualify for grants, regional water managers must coalesce with managers in related fields (such as supply-oriented districts with wastewater treatment districts) and local citizen groups. As they form new ways of working together to write plans, implement grant projects, and raise matching funds, they have had to employ more collaboration techniques than before. Grant funding has

been available for the planning stage, which also develops collaboration skills and builds new capacity in water management personnel. A new emphasis on regional management also creates new demands for engagement tailored to local needs and practices.

Potential Benefits

Public outreach and engagement produces two broad types of benefits: instrumental, outcome- oriented benefits (such as designing a program that satisfies multiple criteria) and intrinsic, process-oriented benefits (such as building trust between participants). There are two ways that public involvement leads to instrumental outcomes. First, public involvement results in a citizenry that is more understanding and appreciative of the issue, and thus one that makes informed decisions. Second, public involvement results in an agency that makes better decisions as a direct result of including public knowledge. In addition to instrumental outcomes, public involvement provides many intrinsic benefits, such as enhanced community capital.

Public Involvement

A single regulatory agency or municipal office working alone cannot be as effective in achieving optimized water management unless it has the participation, partnership, and combined efforts of other groups in the community, all working toward the same goal. The point of public involvement is to build on community capital — the connections and wealth of knowledge of interested citizens and groups — to help spread the message on water goals and actions to manage, restore, and protect water resources.

Public involvement also includes facilitating opportunities for direct-action, educational, and volunteer programs, such as riparian planting days, volunteer monitoring programs, storm-drain marking, or stream-cleanup programs. Groups, such as watershed groups and conservation corps teams that want to participate in promoting environmental causes, should be encouraged and offered opportunities to participate in water stewardship. Public involvement can promote other goals, such as developing and implementing a water-oriented public health campaign like mosquito-breeding prevention (see Box 2).

Outreach and engagement starts to build a platform for a more sustainable future by helping people take individual and collective action that supports more sustainable water outcomes. Children can participate as well, via class curricula built around stream monitoring and cleanup. In a diverse population such as California's, it is important to reach out to the various populations and invite them to participate via their own language(s). Although that may seem as a given, agencies tend to be monolingual. Because many California populations speak predominately in their native languages, such groups should be addressed in a language that is understandable to them. Bringing these groups into public processes can also be constrained by when and where public meetings are held. Particularly in large cities, many agency meetings are conducted only in English and during the work day. Non-English speakers from rural communities, or people whose jobs do not provide flexible hours, may find it impossible to participate.

Collaborative Policy-Making

Much research exists on the benefits of outreach and engagement and the methods it incorporates. While the time involved in engaging others may seem to slow down projects and programs at the beginning, evaluations have revealed that well-delivered processes reduce the ultimate time to implement desired goals, reduce litigation, and significantly reduce unintended consequences of water policy decisions. In

Box 2 Mosquito Control

Mosquito control is a good example of a problem that takes strong public involvement to address. Controlling mosquitoes is critical to maintaining both a high quality of life and protecting people from mosquito-transmitted (vectored) diseases, such as West Nile virus. Since many water-related uses and activities can contribute to mosquito breeding areas, a number of best management practices (BMPs) have been developed by the California Department of Public Health and the Mosquito and Vector Control Association of California to promote mosquito control. Getting these BMPS out to the public and getting the public to follow them requires a public health campaign and widespread public involvement. These BMPs include water use activities in both urban and rural areas. The full list of BMPs is available at the following Web site: http://www.cdph.ca.gov/HealthInfo/discond/Documents/BMPforMosquitoControl07-12.pdf (California Department of Public Health, Mosquito and Vector Control Association of California 2012).

2011, researchers conducted a study to determine whether citizen participation enhances performance of public programs and attainment of organizational goals, which was defined as increased efficiency and effectiveness. Researchers concluded that, "On average, greater citizen engagement is strongly and significantly related to better performance of public agencies" (Neshkova and Guo 2011). Such research is significant because it supports continued refinement and use of outreach practices. Evolving research on developing culturally appropriate outreach will also contribute to more comprehensive and reliable collaboration with communities in need of water information.

Collaborative policy-making or project selection can have additional benefits. Having stakeholders involved through researching options and selecting a project can create buy-in from the people who will pay for the project. Their participation may help an agency pick an appropriate level of technology and resources for end users, and create a body of people looking forward to seeing a policy put in place or a project completed. Outreach in the form of collaborative policy-making results in improved decision-making, as agencies learn more about what is of concern to stakeholders and the full requirements of any particular watershed or system is revealed.

In the absence of a concerted outreach effort or collaborative policy-making, research and experience suggest that community members' opinions of water issues may be influenced by inaccurate perceptions of project risks or benefits; whether the project is viewed as consistent with the community's long-term goals; social factors, such as the degree of trust placed in the project team and government agencies; and the perceived equity in the process for developing a project. Media coverage, word-of-mouth communication, and such information sources as blogs and other electronic media often influence how individuals form opinions. Perceptions that may seem exaggerated from a technical point of view must be taken seriously. Perceived risks are no less real for purposes of implementing a public outreach program. If these perceptions and concerns are not addressed by water managers, they can rapidly transform into public opposition.

Youth Education

Research indicates that public education on water use has a significant return on investment as children may leverage activities at home and influence the behavior of adults with whom they interact. This shift in thinking will be increasingly important as California's growing population and increasing water demands come up against a finite water supply. A population that has been educated since childhood about the sources and uses of water in California and where their own water comes from will be more willing to change their behavior during droughts or stay prepared for floods. Some recommended youth education goals involve:

- More participation in conservation programs.
- More equitable and just usage and distribution of water, including environmental uses.
- More understanding of, and greater contribution to, climate change adaptation and resilience.
- More aesthetic appreciation of water.

In 2003, then-Assemblywoman Fran Pavley authored legislation that required development of an environment-based curriculum to be offered to all California public schools. Assembly Bill 1548 (Statutes of 2003) was sponsored by Heal the Bay, a nonprofit organization, and was signed into law by Governor Gray Davis. The program came to be known as the Education and the Environment Initiative (EEI) (California Environmental Protection Agency 2003).

The curriculum took several years to develop and was approved by the State Board of Education in 2010 (West 2010). It addresses 85 different aspects of the environment. Fifth grade is predominately focused on water resources. One 8th-grade unit is titled "Liquid Gold: California's Water" (California Environmental Protection Agency 2010). This unit teaches students how water is distributed and managed as a natural resource. It examines the importance of water to society, and specifically looks at the challenges California faces in balancing available water supply with societal demands. The section considers the imbalance between water supply and demand in California and examines the spectrum of considerations involved in decisions regarding California's water supplies. The final lesson considers the scope and potential environmental effects of water resource policies and the role of scientific knowledge in the development of the State's water policies.

Climate Change

Climate change can be a polarizing topic that results in mixed messages and confusion. Even the term "climate change" can deter some people from discussing the problems that climate change can cause and from investigating potential solutions to mitigate and prepare for these environmental changes. In addition, many people still tend to view climate change impacts and solutions as global rather than local. Regardless of what people believe is causing the current climatic changes or whether they perceive the changes as a local or global issue, California's water resources are being affected by climate change. Sea levels are rising, snowpack is decreasing, and water temperatures are increasing. These changes affect the State's ability to ensure reliable water supplies and water quality, manage floods, and protect ecosystem functions and critical habitats. California's watersheds are vulnerable to climate change. Communicating about climate change is necessary for making informed local land-use choices, conducting successful water-resource planning, and developing effective hazard-mitigation approaches.

Adaptation and Mitigation

Outreach and engagement are critical components in adapting to climate change. This outreach-and-engagement resource management strategy can improve communication with the public, governmental agencies, industry and businesses, and nonprofit organizations about the susceptibility of California's water resources to climate change. Public engagement helps educate and build commitment and consensus among decision-makers and community members. Developing a consistent message about the state's vulnerabilities to climate change is crucial. Consistent messaging across media platforms reaches a wide audience. For example, a Web site that addresses water management issues, highlights emergencies, and provides guidance, social media, alerts, webinars, and town hall meetings can be effective. An outreach and education program also should highlight the multiple benefits that can result from

implementing a variety of water management strategies that complement adaptation strategies and should build on existing relationships with local communities. Moreover, it is important that communication is not one- sided. Agencies should solicit input and provide feedback. Communities need to develop and own their choices and have a vested interest in their water resources decisions. Framing the issues in terms of local impacts and solutions can strengthen communication. Adapting to the impacts of climate change will continue to be an ongoing process. Therefore, it will be critical to improve the accessibility of information, improve monitoring, work together across institutional and social boundaries, and leverage resources.

Mitigation is accomplished by reducing or offsetting greenhouse gas (GHG) emissions in an effort to lessen contributions to climate change. Educating the public about mitigating climate change and reducing their communities' carbon footprint is necessary. The costs of adaptation are far greater than the costs of reducing emissions causing climate change. Offering locally relevant education to water managers will encourage climate change mitigation in planning and will help them identify the best benefits for their community.

Public benefits of mitigating climate change at the community level can improve air quality, provide cleaner, more reliable water, and improve public health. Promoting these benefits can encourage public acceptance and investment in mitigation strategies. Teaching the public to understand the importance of lowering their GHG emissions through access to information, public awareness, and education will foster empowerment and ownership. Education has a central role in mitigating climate change. Instilling awareness at a young age will shape the attitudes and behaviors of the next generation. Developing a K-12 outreach program as part of the regular curriculum can help disseminate knowledge effectively through the community.

Potential Costs

The costs of outreach and engagement campaigns are generally the costs of staff time. A large process or public outreach campaign may require full-time trained staff to schedule meetings, prepare material, refine messaging, and rehearse presenters.

Another notable cost is the time involved. Researchers note that "participation is time consuming and has the potential to slow down decision-making since the public needs to be informed and even educated first in order to meaningfully participate in administrative processes" (Neshkova and Guo 2011). This can require an investment from all participants. Paid advocates' participation time is supported by their advocacy group, but members of the public may have to donate their participation time. If agencies want to ensure that representatives from disadvantaged communities are involved, they may have to give them financial assistance for their travel and time. Large-scale projects may have to budget a significant amount to support participation. Large public information campaigns will require refining messages, producing materials, and buying media time. In general, the costs of doing significant, well-delivered outreach and education are small compared with the usual costs of building and maintaining water infrastructure.

Major Implementation Issues

Widespread Lack of Understanding of Water Management

A major challenge for outreach and engagement is the current lack of understanding about water management in general. Californians' lack of understanding of their physical water system is significant. Although there is often a strong sense that water is scarce and important, even important enough to fight over, many stakeholders and the public do not have much understanding of the physical or governance system that delivers their water. Many, if not most Californians, do not know how water gets to them or the features of the water landscape around them. People do not know their water sources, and consequently they do not know how or why those sources should be protected. In a recent survey, 78 percent of Californians did not know what the Bay Delta is, despite its function as the hub of California's two major water projects.

In addition, people are busy with their lives and the world is full of interesting and complex issues. People may make a considered choice not to engage in water management issues. Some IRWM groups report that, when they have sought citizen engagement, some of their citizens have responded that they pay their water districts to evaluate the options and make choices for them.

Complex Governance Structure

At a local level, few people are able name their particular water sources or their district's board members or managers. Without a doubt, California's water governance structure is difficult to understand and apply to individual situations. As people become more interested in water policy, they report that the State-level governance structure is bewilderingly complicated, with multiple agencies portioning different pieces of water management. Because the public is disengaged from these systems, it does not know how to get involved in public policymaking or discussions. Stakeholders that are not professional issue advocates want to be involved, but they do not know enough about how agencies work to participate in a meaningful way. Often, these stakeholders say they do not even know what questions to ask. They may attend meetings only to find that the topic is related, but the agenda is narrowly focused on a specific topic that they do not have the background to understand.

On the other side, there is also a need for State employees to work with interested stakeholders by providing useful information and considering the public's comments. Because California's water governance is so complex, even water managers and policy-makers have only limited expertise. Moreover, tribes have the perspective that State governing bodies do not understand how tribal water rights interact with the water rights administered by the State, including the historical and cultural significance of how tribes view and use water.

The Public Underestimates Risk

Because people are largely unaware of their local watershed and water delivery systems, they may underestimate the level of risk they face (from many potential water problems, such as flood, interrupted service, and water quality threats). The risks posed by water management problems are not familiar to the public. The public may have no reason to research these risks and may choose to live in areas serviced by vulnerable, small water systems without understanding that their sources of water are variable or that they have bought into under-maintained systems. They may choose to live on floodplains without understanding what flood risk involves, or with the erroneous assumption that the local levees absorb all

flood risk. If they have never received notice of this risk, or were only told about the risk in technical language that does not resonate with them, they can become angry when the risk turns into a reality that they are unprepared for, or when told about the costs of addressing the risk. Alerting homeowners about risk takes extensive public outreach campaigns.

Another reason the public may not know about the water management risks or issues that affect them is that their water district may consider the job is well done if the risk is averted without the public ever noticing. If a water district swiftly and professionally repairs a leaking pipe before it causes a sinkhole, it has done its job well, but the public may never become aware that the pipe is reaching the end of its design life and needs replacement soon. They may be surprised by the issue because the district has been managing the warning signs so well, the risk is invisible to the public.

Diverse Communities Require Diverse Outreach

Another significant challenge relates to the varied cultural and geographic diversity of the state's residents. Outreach and engagement tools should not be limited by an assumption that a campaign that reaches the mainstream culture would also reach other diverse cultures equally well. Many current outreach methods do not address these more diverse needs. Much progress is being made in this area with the use of pilot projects and other innovative programs, but more is needed.

Water Managers May Not Want to Use Outreach and Engagement

Some agencies and decision-makers may not have experienced the benefits or high value of outreach and engagement. They may underestimate the importance of the tool and the need to build it into the overall project or policy approach, rather than add it on later because of public outcry. More and more agencies are gaining a better understanding of the value of outreach and engagement. Nonetheless, due to shrinking resources and frequent crushing time frames for resolving urgent issues, outreach and engagement are not always a priority for limited agency staff to spend their limited time and capacity. Outreach and engagement may present up-front costs that do not offer immediate or tangible benefits. Additionally, water managers may perceive outreach or collaboration as giving rise to controversy and do not want to be involved with it. Finally, people who are assigned to conduct outreach and engagement are not necessarily professionals in that discipline. They may be technical staff within the agency who have not been trained in communication skills, or who are not comfortable facilitating public meetings. Public speaking or leading groups intimidates many people, including some assigned to lead outreach on a project or policy.

A common format of public meetings is a formalized process that does not create good dialogue. Public meetings are often centered on a technical presentation that allows limited time for questions or has procedural rules that stifle participation; and some public hearings are highly contentious. Hosts and attendees alike can find these meetings dull or frustrating. If these types of meetings are the only public meetings with which these groups are familiar, and they assume that public meetings must be conducted in these ways, it is not surprising that neither group wants to commit time to a series of stakeholder meetings.

In some cases, it would be more practical for academic institutions or non-governmental organizations to assume the role of delivering these services rather than the various types of water-related agencies. This

approach is particularly effective when significant resources and relationships already reside in potential partner organizations.

Poorly Designed Public Processes

If a process for collaboration and engagement is poorly designed or inauthentic, it can backfire. A poorly designed or moderated public process can be hijacked by professional advocates so that the result does not accurately reflect the concerns of all involved. (Often a determined saboteur can bring a process to a halt, even if it is well designed.) It can create stakeholder fatigue, meaning stakeholders tire of attending meeting after meeting.

A Flood of Outreach and Engagement Materials

In some cases, there is too much information in outreach and engagement tools without proper guidance to the best applications of the tools and/or the validity of the approaches as a best practice. A number of efforts have resulted in success, but could have been delivered more effectively and efficiently. In other cases, selecting the wrong tools or application of tools incorrectly results in building cynicism and making future outreach even more difficult. This type of error has profound implications for issues where conflict resolution is required. Many different organizations have developed outreach materials and curricula. Searching and selecting among them can be daunting, as can choosing the right materials for the situation that the water district or agency is encountering.

Well-intentioned agencies and decision-makers, when looking at the wide variety of tools, are known to prescribe a tool to their outreach and engagement personnel that appears to work well from all the papers, books, and other materials they have researched, but these may or may not be the right tool for a particular effort. Without some well-organized or professionally evaluated assessment of information, selection of these methods by non-professionals can have negative results. Major public information campaigns may want to integrate messages among water service agencies.

Distrust of Government and Science

Public trust in government has dropped precipitously since the 1960s, when the last major water projects were built — from 73 percent of people trusting government to 26 percent of people trusting government (Pew Research Center 2013). This drop in trust has come about for reasons mostly outside of water management, but has effects on outreach and engagement in all fields. Many citizens may start a public process by initially doubting the facts and science presented by the hosts. People have been exposed to "purchased science," which is science funded by an advocate that yields biased results according to what the advocate/funder prefers. The public would then question whether that particular science has been conducted to further an agenda, rather than having a neutral finding of causes and facts. Immigrant communities may have a distrust of government that began in their country of origin. In water management, stakeholders may believe that any examination of their water rights or groundwater levels threatens the continuation of their water use.

A current issue facing water managers is that a small but vocal segment of the population holds increasingly strong beliefs about governance and water-related topics, such as climate change. This active minority doubts or rejects the legitimacy of some planning efforts beyond local government and the science that supports decision-making. This level of skepticism makes crafting public policy difficult. As these types of groups have become more politically involved, they have disrupted public meetings and

delayed planning efforts. Their mistrust of science requires evidence of fact-finding beyond a level of certainty that satisfies most academics, scientists, and technical experts. New requirements for additional fact-finding can take considerable time and money to develop. As long as this mistrust persists, outreach and engagement may be perceived and labeled as propaganda.

Victims of Success

An odd but real challenge is the experience of achieving success in outreach and engagement without also considering the consequences of success. During the 2006-2009 drought, some districts that conducted extensive public-information campaigns regarding water conservation were caught off-guard by a sharper drop in per-capita water use than they were prepared for. Also, an economy in recession and five years of cooler weather reduced water demand. Some districts found that their rate structure required that people use water at their historical levels to cover the fixed costs of delivery infrastructure. When these districts conducted an effective water conservation public-information campaign, constituents were not buying enough water to cover the districts' fixed costs. The districts were forced to increase their base rates, leading to the perception that people were being punished for conserving water. This created resentment and the perception that rates were being set in an arbitrary fashion for the benefit of the agency. In such cases, water districts were not prepared for their public information campaigns to be successful and change people's water use.

Currently, many outreach and engagement programs do not measure effectiveness, possibly because it is difficult to do so. Often when budgets are tight, the first items eliminated are educational programs. Consequently, there is a need to quantify the effectiveness of education and outreach that demonstrates the value of these programs. One of the most commonly applied tools is to conduct surveys before and after the intervention to measure the increase in awareness among the public. In addition to measuring public awareness, there is a need to measure behavior changes. One way to measure urban water conservation is to measure the overall reduction in water use, which can be used to calculate the value of water saved. For other messages, monitoring their effectiveness could be more challenging. All the same, the importance of these messages supports the need to develop monitoring techniques.

Water Policy is Genuinely Complex

A final and difficult challenge is the often bewildering complexity involved in addressing water management issues. Creating or defining a clear public message, something that can be incorporated in a 30-second sound bite, is a challenge. A simple message does not truly represent the situation, but a broad audience may not have the time to appreciate a complex message. In this scenario, water managers may not understand the need to conduct outreach and engagement at multiple levels, at multiple times, to impart multiple messages.

Recommendations

1. Project planning should include a section on what level of public engagement is appropriate.
2. The selected level of public engagement should receive appropriate resources.
   A. Messages and policies should be tested through a variety of sample audiences.
3. Agencies providing grants should include requirements for authentic, well-designed public engagement.
4. Managers should take facilitation and collaboration training and offer it to their staff.

5. Professional conferences and other management venues should include outreach and engagement topics to provide an opportunity to share best practices, leverage activities of their peers, and provide efficiencies.
6. Within regions, water managements should collaborate on outreach campaigns for clarity of message and to better utilize stakeholders' time.
7. Managers should carefully calibrate the extent of the engagement in relation to the policy being developed or the project being designed.
8. Lessons learned from collaboration efforts should be documented to improve future efforts.

References

References Cited

California Dairy Research Foundation. 2013. "Compliance through Education." Davis (CA): California Dairy Research Foundation. [Web site.] Viewed online at http://cdrf.org/home/checkoff-investments/cdqap/.

California Department of Public Health, Mosquito and Vector Control Association of California. 2012. *Best Management Practices for Mosquito Control in California. Recommendations of the California Department of Public Health and the Mosquito and Vector Control Association of California*. Sacramento (CA). 62 pp. Viewed online at http://www.cdph.ca.gov/HealthInfo/discond/Documents/BMPforMosquitoControl07-12.pdf.

California Environmental Protection Agency. 2003. "Education and the Environment Initiative (EEI)." Sacramento (CA): California Environmental Protection Agency. [Web site.] Viewed online at http://www.californiaeei.org/History/ default.htm.

———. 2010. *EEI Curriculum Catalog*. (Sacramento (CA): California Education and the Environment Initiative.

International Association of Public Participation. 2007. "IAP2 Spectrum of Public Participation." Thornton (CO). [Web page.] Viewed online at: http://www.iap2.org/associations/4748/files/spectrum.pdf.

Neshkova MI, and H Guo. 2011. "Public Participation and Organizational Performance: Evidence from State Agencies." Journal of Public Administration Research and Theory. 22(2):276-288. [Web page.] Viewed online at: http://jpart.oxfordjournals.org/content/early/2011/07/20/jopart.mur038.abstract.

Pew Research Center. 2013. "Public Trust in Government: 1958-2013." [Web page.] Viewed online at: http://www. people-press.org/2013/10/18/trust-in-government-interactive/.

State Water Resources Control Board. 1995. *California Rangeland Water Quality Management Plan*. Sacramento (CA): State Water Resources Control Board, Division of Water Quality, Nonpoint Source Program. 96 pp. Viewed online at http://www.waterboards.ca.gov/publications_forms/publications/general/docs/ca_rangeland_wqmgmt_plan_ july1995.pdf.

West L. 2010. “California Approves New Environmental Curriculum for K-12 Students.” New York (NY): About.com Environmental Issues. [Web site.] Viewed online at: http://environment.about.com/b/2010/02/20/california- approves-new-environmental-curriculum-for-k-12-students.htm.

Additional References

Bardach E. 1998. *Getting Agencies to Work Together: The Practice and Theory of Managerial Craftsmanship*. Washington (DC): Brookings Institution Press.

Coglianese C. 1997. “Assessing Consensus: The Promise and Performance of Negotiated Rulemaking.” Duke Law Journal 46(6):1255-1349.

Community at Work. 2010. “Resource List for Practitioners Putting Participatory Values into Practice.” San Francisco (CA). Viewed online at: http://www.communityatwork.com/Resource%20list_2010_new.pdf.

Ebdon C, and LF Aimme. 2004. “Searching for a Role for Citizens in the Budget Process.” Public Budgeting and Finance 24:32-49.

Fiorino DJ. 1999. “Rethinking Environmental Regulation: Perspectives on Law and Governance.” Harvard Environmental Law Review 23(2):441-469.

Henry AD, M Lubell, and M McCoy. 2011. “Belief Systems and Social Capital as Drivers of Policy Network Structure: The Case of California Regional Planning.” Journal of Public Administration Research and Theory 21(3):419-444.

Jervis R. 2006. “Understanding Beliefs.” Political Psychology (27)5:641-662.

John D. 1994. *Civic Environmentalism: Alternatives to Regulation in States and Communities*. Washington (DC): Congressional Quarterly Press.

Johnson BR, and R Campbell. 1999. “Ecology and Participation in Landscape-Based Planning within the Pacific Northwest.” Policy Studies Journal 27(3):502-529.

Kagan RA. 1999. “Trying to Have it Both Ways: Local Discretion, Central Control, and Adversarial Legalism in American Environmental Regulation.” Ecology Law Quarterly 25(4):718-732.

Kenney DS. 2000. *Arguing About Consensus. Examining the Case Against Western Watershed Initiatives and Other Collaborative Groups Active in Natural Resources Management*. Boulder (CO): Natural Resources Law Center, University of Colorado School of Law School.

———. 2000. *Assessing the Effectiveness of Watershed Initiatives: The Current State of Knowledge.* Boulder (CO): Report to the U.S. Environmental Protection Agency. Natural Resources Law Center, University of Colorado School of Law.

Larsen L, SL Harlan, B Bolin, EJ Hackett, D Hope, A Kirby, A Nelson, TR Rex, and S Wolf. 2004. "Bonding and Bridging: Understanding the Relationship Between Social Capital and Civic Action." Journal of Planning Education and Research 24:64-77.

Leach WD. 2006. "Collaborative Public Management and Democracy: Evidence from Western Watershed Partnerships." Public Administration Review 66:100-110.

Leighninger M. 2011. *Using Online Tools to Engage – and be Engaged by – The Public*. Washington (DC): IBM Center for the Business of Government. Using Technology Series. 41 pp. Viewed online at: http://www.businessofgovernment.org/sites/default/files/Using%20Online%20Tools%20to%20Engage%20The%20Public_0. pdf.

Lubell M. 2004. "Collaborative Environmental Institutions: All Talk and No Action?" Journal of Policy Analysis and Management 23(3):549-573.

Marsh LL, Lallas P. 1995. "Focused, Special-Area Conservation Planning: An Approach to Reconciling Development and Environmental Protection." In: Porter DR, Salvesen DA, editors. *Collaborative Planning for Wetlands and Wildlife: Issues and Examples*. Washington (DC): Island Press. Pp. 7-34.

Nevada Division of Water Planning. 2011. *Nevada State Water Plan: Part 3 — Water Planning and Management Issues: Section 5 — Water Planning and Management: Water Education*. Carson City (NV). 6 pp. Viewed online at http:// water.nv.gov/programs/planning/stateplan/documents/pt3-5d.pdf.

Petty RE, and JT Cacioppo. 1986. *Communication and Persuasion: Central and Peripheral Routes to Attitude Change*. New York (NY): Springer-Verlag.

Pretty J. 2003. "Social Capital and the Collective Management of Resources." American Association for the Advancement of Science 302:1912-4.

Probolsky Research. 2012. *California Statewide Voter Survey: Report on Results*. Newport Beach (CA). Prepared by Probolsky Research LLC. 36 pp. Viewed online at http://www.probolskyresearch.com/wp-content/ uploads/2012/01/Probolsky-Research-CA-Statewide-Survey-Jan.-2012-Water-Issues1.pdf.

State and Regional Water Quality Control Boards. 2011. *Citizen's Guide to Working with the California Water Boards*. Sacramento (CA). 74 pp. Viewed online at http://www.waterboards.ca.gov/publications_forms/publications/ general/docs/citizenguide2011.pdf.

Taylor M, and S Singleton. 1993. "The Communal Resource: Transaction Costs and the Solution of Collective Action Problems." Politics and Society 21(2):195-214.

Wholly H2O. 2013. “Resources.” Oakland (CA): Mainstreaming Localized Water (Re)Use. [Web site.] Viewed online at http://www.whollyh2o.org/resources.html.

Wilbur M. 2005. “Californians Without Safe Drinking Water: A 2005 Update.” In: *California Water Plan Update 2005*. Sacramento (CA): California Department of Water Resources. 82 pp. Viewed online at: http://www.waterplan. water.ca.gov/docs/cwpu2005/vol4/vol4-waterquality-californianswithoutsafewater.pdf.