

**Expert Panel Workshop
Public Education Under the Lead and Copper Rule and Drinking Water Risk
Communication**

Summary

September 14, 2004 - September 15, 2004

Hilton Philadelphia Airport

Facilitated by Charles Wood, Guild Communications

Day One : September 14, 2004

This workshop is part of a series of workshops hosted by the United States Environmental Protection Agency (EPA). The objective of this series is to provide a forum to exchange information and discuss options and approaches with national experts on implementation of the Lead and Copper Rule (LCR). Today's workshop was developed to discuss the topics of public education (PE) requirements under the lead and copper rule, drinking water risk communication, and effective communication with the public. Specifically, EPA is interested in learning about implementation challenges and how water systems have addressed them. This information will help EPA in its deliberations of potential changes to guidance, training, and regulations related to the LCR.

Each day will consist of case study presentations, expert panel comments, open discussion, sub-panel discussions, and sub-panel reports. Charles Wood, facilitator, began the workshop by introducing the panel members (see Attachment A for the attendance list) who gave a brief description of reasons for their participation. This workshop's final outputs will be a summary of group discussions, identification of key issues, and sub-panel reports.

Lisa Christ, EPA, presented a brief overview of public education under the Lead and Copper Rule. Public education provides information to the public for lead as required under the Safe Drinking Water Act (SDWA). It is important to distinguish it from "public notification," which is used only in the case of a violation or a situation of high concern to everyone served by a water system.

Lead is generally found within the distribution system and levels can vary from one home to the next. The action level of 15 ppb is meant to keep the overall level down, however, it is important not to confuse this with a maximum contaminant level (MCL). Sensitive sub-populations include children younger than 6, pregnant women and fetuses, and immunocompromised individuals (e.g., those with AIDS, undergoing chemotherapy, or transplant patients). Health effects for lead, which include impaired mental development, IQ deficits, shorter attention span, and lower birth weights, can last throughout an entire lifetime.

Education about lead sources in drinking water and possible effects is important. Lead can be leached from plumbing materials such as solder, pipes, fixtures, etc. It is also important to remember that the Lead and Copper Rule does not require all homes to be tested; the test number is based on the size of the overall population served by the system and designed to target

sites likely to have highest lead levels at the tap. Also, not all taps need to exceed the action level in order for there to be concern. The utility must take action when 10 percent or more of homes tested exceed the lead action level.

Within 60 days of exceeding the lead action level, systems must inform the public (e.g., bill stuffers, posters in public places) at various intervals for as long as the situation exists. EPA's guidance document, "Lead in Drinking Water Regulation: Public Education Guidance" (EPA 816-R-02-010) was updated in 2002. It includes three major recommendations for water systems:

- Have an action plan in place to implement when needed.
- Establish a task force including community members (e.g., faith-based organizations, community centers).
- Meet early with managing editors of major newspapers.

Last, Lisa Christ briefly touched on the Consumer Confidence Rule and the Public Notification Rule as other sources of public information for lead under SDWA.

Eric Burneson, from EPA's Office of Ground Water and Drinking Water, presented a summary of national issues and how this workshop fits into the larger efforts at EPA to examine implementation of the LCR and the rule itself. With regard to implementation, there is concern over the degree to which recent events may or may not be an indication of a national problem. According to a June-July 2004 collection of data, fewer than 4 percent of systems exceeded the lead action level.

This series of expert workshops was set up to look at specific areas of the rule, using specific areas of expertise to set up an exchange of information on challenges faced by systems and successful strategies used to address them. The first workshop looked at issues associated with simultaneous compliance of the LCR and other drinking water regulations. The second workshop dealt with sampling provisions. These provisions have been challenging to implement and have spurred discussion on re-evaluating regulatory requirements. A future workshop will discuss lead service line replacement - including how to prioritize pipe replacement. Another suggestion for a future meeting is health effects and how best to communicate them.

The main goal of this workshop is to have an exchange of information on challenges and strategies and how EPA can make improvements to guidance and training. The next National Drinking Water Review is due in 2008. This workshop is not looking to develop a consensus on issues and panel members were reminded that it will be important to keep a national perspective on the issues discussed.

After these introductions, three case studies were presented to the panel.

Case Study #1: Fort Worth Water Department, presented by Richard Talley

Richard Talley presented the first case study. The Fort Worth Water Department serves a population of 589,850 and has 29 wholesale customers. There are about 35,000 lead service lines around the city. The Water Department has a lead service line replacement program and replaces about 10 percent each year, even though they are not required to do so by regulation. The Department replaces everything on the utility side and works with consumers to reduce or eliminate lead exposure on their end.

The last required monitoring in Fort Worth was in 2002 and the lead levels were well below the action level. Monitoring is a voluntary program, however, participants are given incentives (free and follow-up testing and complimentary gifts). Fort Worth provides a Consumer Confidence Report, a 24-hour hotline number, maintains a “Commonly asked questions about lead” Web site, has a speaker’s bureau (which staffs water quality talks to the public upon request), keeps their brochures up-to-date on current issues, and coordinates with other health and regulatory agencies.

Mr. Talley noted that the diverse and expanding population base in the Fort Worth area requires an ever-changing public education department.

Case Study #2: Portland Water Bureau, presented by Yone Akagi

The second case study was presented by Yone Akagi and focused on the Portland Water Bureau’s Lead Education Outreach and Lead Hazard Reduction Program. Portland’s primary water source is unfiltered surface water, with a ground water backup. There is no detectable lead in the source water, and they have no lead service lines, so any lead found in drinking water most likely comes from lead-based solder and other fixtures.

Between 1998-2002, the 90th percentile level hovered around the 15 ppb action level. Portland has been below the action level since the spring of 2003. The recommended optimized treatment for lead involved raising the pH to 9.0-9.5 and the alkalinity to 20 mg/L. The Portland Water Bureau was tasked with finding alternatives to chemical treatment. The components of the Lead Hazard Reduction Program (LHRP) are as follows:

- Raising the pH to at least 7.5 (currently pH is set at 7.8)
- Implementing a home lead hazard reduction program (now discontinued)
- Providing public education and community outreach
- Conducting a lead in water education and testing program

Because the utility did not believe that lead in drinking water was the primary source of exposure, they believed a LHRP program that addressed all sources of lead would be the most effective way to decrease lead exposure in the community. The physical removal of lead in the water system included banning the use of lead-based solder, removing all known lead pigtails, and replacing lead-component meters. The utility expends \$443,000 per year to carry out a lead

education and outreach program that includes developing “LeadLine,” a resource for lead information and referrals, free lead testing (both blood levels and environmental), and printed outreach (e.g., postcards, annual bill stuffers, brochures). Much of the outreach was targeted to at-risk consumers. The utility conducts free water sampling for customers and is working to expand blood level lead testing for children. The limited data they have to date seem to indicate decreases in the percentage of children with elevated blood lead levels.

Case Study #3: Seattle Public Utilities, presented by J. Paul Blake

The final case study on Day 1 was presented by J. Paul Blake and focused on activities taken by Seattle Public Utilities (SPU) for the past 30 years. Local media have had different approaches to how SPU has addressed lead. Mr. Blake shared a local news clip on lead in drinking water.

There have been no calls regarding drinking water quality from the public. With regard to higher lead levels found in school water, studies have found that the source of lead is likely not from the water supply but is a problem in the interior plumbing in the schools. In 2003 there was a decrease in lead levels, most likely the result of the utility reducing the corrosiveness of the water going through the distribution system.

Panel Discussion

After the case studies, the facilitator solicited comments from panel members, and later the public, about challenges, opportunities, and lessons learned with regard to implementation of the public education requirement under the LCR. Attachment B contains the list of comments.

The comments were sorted into four issue groups for further discussion.

- Partnerships
- Message content
- Message delivery
- Planning and evaluation

The panel was broken up into four sub-panels, with each sub-panel discussing one theme. The goal of the sub-panel discussions was to identify other issues of concern for their theme, further define challenges, identify approaches or strategies to address challenges, propose solutions within EPA guidance and training, and identify critical information gaps.

Reports from Issue Sub-panels

After discussing and considering the issues, each sub-panel summarized their topic for the full panel.

Partnerships

Challenges:

- Lead in drinking water is not a key issue for health officials.
- Local health officials are often not familiar with drinking water issues. A driving force is usually needed to bring health officials together.
- Partnerships need money, staffing, champions, an issue to galvanize teams, and ownership (maintain responsibility).
- Setting up a division of responsibilities is challenging. A real partnership should be able to stretch beyond lead and copper.
- Mandatory language affects the ability of partnerships to get message out, this can be frustrating.
- Lack of incentives - utilities above the action level should have a task force to help bring in partners.

Strategies and approaches:

- Tapping into existing partnerships is easier. Small utilities can tap into a region- or state-wide group. It's not practical for a small utility to develop partnerships with local health officials.
- Develop a partnership dealing with general health issues and drinking water. Those might be enough of a driving force to pull together the partnership.
- Develop incentives for partnership (guidance, money, regulations, etc.).
- Get information to utilities and others on how to develop partnerships and how to set up information flow within partnerships.
- Obtain funding from other sources; partnerships can also share costs.
- Develop a national program to highlight successful partnerships.
- The sub-panel was unable to resolve how to encourage utilities not in exceedance to do partnership or education work.

Critical information gaps include how to encourage and develop partnerships and how to identify stakeholders. It's highly important to develop any partnerships before a crisis. However, health agencies may not be interested in partnerships, especially if a utility is not in exceedance.

Message Content

The purpose of public education is to inform the public, empowering and motivating them to make informed choices, build public support, and create dialogue. There needs to be an ongoing effort before a crisis.

Message content should take into account the following:

- What happened.
- Health implications.
- Utility actions and possible utility actions - not all utilities can promise actions within the timeframe or budget.
- Clarify and inform what the public can do - include a menu of applicable options that the provider can use.
- Don't include information on lead service lines if there are no lead service lines.
- Optional language for special circumstances (e.g., non-community water systems (NCWS), special needs population).

Public options include the following:

- Flush water - different for apartments and multi-family homes.
- Use cold water.
- Test water and check plumbing for lead and lead solder; replace lead service lines from meter to house.
- If replacing fixtures, ensure fixtures are NSF-certified, but make sure fixtures aren't replaced if there isn't a problem.
- Use bottled water and water filters.
- Utilities should clear up misunderstanding that boiling does not protect against lead contamination.

Health language should take into account the following:

- Realistic assessment of risk - a critical gap is the misunderstanding between the medical industry and water providers.
- How does the action level relate to health risk?
- What is the significance of the 90th percentile regulation?
- Need clear language on health impacts.
- The message to the public should increase confidence. Develop a message as an adjunct to LCR language to reassure customers.
- Encourage utilities to reassure customers that utility is doing everything possible to protect drinking water, if appropriate.

Challenges:

- Flexibility vs. ensuring critical information is disseminated as LCR intends - it's important to get information into the public's hands.
- Accurately reflects utility's ability to follow through (i.e., provide testing).
- Readability vs. completeness - tiered (have a broad message for all situations and provide a more complete message at a later point) and easily understood (5th to 8th grade level) messages.
- Tailor message to targeted audience; ensure that it is culturally sensitive and meets any special needs.

Potential solutions:

- Clearly define objectives and goals of public education.
- Task force can include special audience experts to edit and revise messages to relate to particular audiences.
- Craft readable, understandable language.

Message Delivery

- Small systems in small states have primacy agencies that provide them with prepared print materials and directions for using them in case of exceedances. The state agency needs to do outreach; small systems will not likely talk to health providers, doctors, or advocacy groups. Small systems within large states probably have primacy agency help, but EPA can also have prepared materials available online.
- EPA can provide generic information for health departments. Having the information already translated into other languages can be helpful.
- Customize message to high-risk populations. Be sure to address language problems, low education, and low literacy.
- There should be a big emphasis on oral communication (e.g., social services, WIC, daycare, preschool, Headstart). Get health care providers (e.g., nurses) and advocacy groups to take more active roles.
- Generate ongoing public information about basic actions people can take to protect themselves (e.g., flushing, using cold water, what to expect when replacing plumbing fixtures). It's important for the public to understand basics even if their system is not in exceedance.
- Plumbers' groups should know more about "lead-free" fixtures (e.g., by providing information through Home Depot).
- Provide education for health care providers.
- Actions can be encouraged by guidance, not mandated in rule, and incentives should be listed (e.g., long-term relations with customers).
- Educate the media on issues. Professional organizations can help with ongoing general education, and talking to them in non-crisis times is important. Providing a basic level of education can minimize later confusion.
- Opportunities for outreach include Earth Day, Fourth of July, National Drinking Water Week, and booths at local fairs.
- If there is an action level exceedance:
 - Individual notification required (direct mailing, insert, door-to-door, outcalling - automated phone calls to pinpointed GIS areas)
 - All media types should be notified.
- As the responsible party, water systems should take the lead when there is an exceedance.

Planning and Evaluation

- There has been no national evaluation of public outreach efforts on lead in drinking water by the water supply industry during the past 13 years.
- The purpose of public education is to educate the public on lead issue aspects to reduce public exposure.
- Possible quantifiable measures of success include:
 - Knowledge of citizenry on drinking water and what steps to take to limit exposure
 - Percentage of people requesting testing of their tap water
- Survey public knowledge of drinking water. Compare knowledge of consumers in areas with exceedances where public education was required to the knowledge of consumers in areas without exceedances where PE was not required. The survey could audit specific utilities that have public education programs; these communities should theoretically be more knowledgeable than others. Results can be divided by system size or by specific cities.
- Possibly add several questions to the Census Bureau survey to gain an understanding of public knowledge about lead in drinking water.
- Information gaps include possible unknown, but existing, evaluation mechanisms. There are many groups that do health awareness; perhaps it would be possible to adapt their evaluation methods or programs for LCR PE evaluation purposes.
- Identify and work with utilities doing voluntary or mandatory work and catalog their activities.
- Current education program doesn't give due credit to water supplier efforts (reducing public exposure to lead system-wide). It would be useful for consumers to view themselves and water suppliers as part of a team. Public education does not appear to increase concern of consumers enough to ask for lead testing.

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Day Two : September 15, 2004

The second day of the public education workshop focused on risk communication challenges in lead public education. The panel briefly reviewed the four key areas identified at the previous day's meeting: partnerships, message content, message delivery, and planning and evaluation. Interactive communication was brought up as one component of public education that wasn't discussed previously.

Joseph Jimenez, of Guild Communications, gave a presentation on risk communication challenges to the public education requirement under the LCR. Risk communication is a science-based approach for communicating effectively in high concern, high stress, emotionally-charged, or controversial situations, when there is low to medium trust from the public. The public education requirement under the Lead and Copper Rule (LCR) doesn't allow a utility much flexibility.

The first and foremost goal of risk communication is to develop and maintain trust and credibility. This, combined with constructive dialogue, leads to informed decisions. It is important that empathy and caring are conveyed in the first moments of communication. "Mental noise" is another issue that gets in the way of a message. Because of this, it's essential to reduce the main message to the simplest terms (7-12 words). It is also effective to break up the main message into three key points. Local citizens are always at the top of trust and credibility rankings. These rankings are used to develop a credibility ladder and help to determine who will be most effective in communicating to the public.

Audience attention span varies with the level of concern. In situations of high concern, audience retention is about 85 percent for 15 minutes, 80 percent after 20 minutes, and then falls to zero. In situations of low concern, audience retention is about 85 percent for 50 minutes, then 70-75 percent for 1 hour and 45 minutes before falling to zero. Negative terms (no, not, never, nothing, none) foster negative dominance. Communications should be aware of non-verbal communication and use active listening.

Joseph Jimenez next covered message mapping. Each message should have three validating points (pertaining to specific communities), each of which needs two supporting points. It's difficult to challenge a message that uses proper mapping. Creating a favorable and receptive environment is a difficult task. Communicating risk is not the same as risk communication. Output is the volume of material developed. The outcome or impact of a message is the change in awareness, response, behavior, or attitude. Behavioral change (and maintaining behavioral change) is the most difficult outcome.

How can the desired goal be recognized and what should be done when the goal is attained? Often, informed decisions aren't enough; rather, the end goal is for the public to make favorable decisions.

Case Study #4: Washington, DC, presented by Vicky Binetti

Vicky Binetti presented the first case study on the second day on Washington, DC. The DC Water and Sewer Authority (WASA) is provided water by the Washington Aqueduct which is owned by the Army Corps of Engineers and has about 1 million customers. While the District of Columbia (DC) is eligible for primacy (oversight responsibility), it has not applied, and EPA has primacy for the drinking water program. During the late 1990s, lead levels were about 8 ppb and the utility was allowed to go to reduced annual monitoring. The utility observed greatly increased levels of lead in August 2002. There is no clear reason why there was such a dramatic increase in lead levels in a short period of time, however, more frequent monitoring (every 6 months) showed this was a sustained increase.

To fulfill the public education requirements, WASA sent out a mailer which was separate from customer water bills, entitled "Living Lead-Free in DC." This brochure was developed in conjunction with the Department of Health (DOH) and discussed the drinking water exceedance and other sources of lead exposure. In retrospect consumers believed that the drinking water information was "buried" or minimized in the overall lead exposure information provided in the brochure. Also, consumers may not have recognized the significance of the mailer since it was distributed in a package of newspaper circulars. The mailer was also criticized for not being straightforward about the exceedance and the semantics of "meeting standards" and "exceeding the action level."

Once additional flushing data was collected, it was found that normal flushing guidance (15-30 seconds) was not sufficient to reduce lead exposure. Subsequent guidance, which attempted to provide new information, confused consumers. The information provided did not have its intended impact. The public was not informed of the severity of the problem. Public confidence was shaken in WASA, the DOH, Washington Aqueduct, and EPA.

High lead levels still persist, but actions are being taken to reduce the risk, including free sampling and filters for consumers with lead service lines as well as the addition of a corrosion inhibitor (phosphoric acid) to the distribution system. There are a number of challenges that remain including questions about how to best reach the target population, how to communicate the health implications of lead at different concentrations, and how to best explain complex flushing instructions. The utility must also work to ensure that its materials inventory is complete so that it knows who has lead lines and determine how to prioritize lead line replacement.

The DC experience provided a number of lessons learned. The utility learned that it is important to make sure there is an appropriate sense of urgency to a message in order to elicit an appropriate response from consumers. This requires timely release of information and adjusting

the message for different audiences. It is also important to gauge the effectiveness of public education efforts and adapt outreach efforts to meet customer needs. The media should also be brought in early to help communicate messages.

Ms. Binetti indicated that some potential positive outcomes included a broadened dialogue with the community, greater awareness of the health effects of lead and drinking water quality issues. She also indicated that the community was undertaking efforts to take a more comprehensive approach to lead poisoning prevention.

Case Study #5: Communicating Water Related Health Risks, presented by Brenda Afzal

Brenda Afzal presented the final case study of the workshop on communicating water-related health risks. Written materials include newspapers, bus advertisements, and postcards, but there is still a need to learn how to do combination methods. It's important to build trust proactively because trust is very difficult to regain once lost. Transparency is also important.

Mandatory disease monitoring and reporting will take a lot of money. Proper training in risk communication is essential, as well as helping the media understand issues. Well-designed risk communication programs are ongoing processes.

Presentation on Risk Communication and the Media

Joseph Jimenez talked briefly about applying risk communication principles to media interactions. Media advocacy and working with the media in the long-term are key.

There are four kinds of risk communication:

1. Public relations - high hazard, low outrage
2. Stakeholder relations - medium hazard, medium outrage
3. Outrage management - low hazard, high outrage
4. Crisis communication - high hazard, high outrage

The facilitator next solicited comments from panel members and the public about issues and ideas for risk communication. Attachment B contains the list of comments.

The comments were sorted into four issue topics for further discussion.

- Messages: consistency, timeliness, targeting for audience, use of visuals, diagrams, results in action
- Developing Risk Communication Competency: using media, partnerships, engaging health care professionals, looking beyond lead
- Risk Communication Strategies and Goals: identify goals, evaluate solutions to ensure they meet goals, consider prevention, put risk in context, motivate public, understand public's needs

- Role of Risk Communication: responsibility, honesty, apologizing, putting risk in context, work with regulators and other partners, communication of risk beyond lead

The panel was broken up into four sub-panels, with each sub-panel discussing one theme. The goal of the sub-panel discussions was to identify other issues of concern for their theme, further define challenges, identify approaches or strategies to address challenges, propose solutions within EPA guidance and training, and identify critical information gaps.

Reports from Issue Topic Sub-panels

After discussing and considering the issues, each sub-panel summarized their topic for the full panel.

Role of Risk Communication

Issues and challenges

- Putting risk in context
- Defining terms
- Communicating uncertainty
- Empathy
- Crisis intervention

Solutions:

- Develop a way to communicate the equivalent risk of 15 ppb of lead (e.g., water at a certain level = # of cigarettes).
- Provide training (e.g., Drinking Water Academy).
- Simple message - keep the issue brief for the media and include documentation and details (e.g., resources for additional information, experts, data).
- Present all information to people who want it (e.g., advocacy groups, health care professionals, concerned citizens).
- Risk communication in a crisis (i.e., first response) provides general education and addresses future concerns.
- Awards can be used as incentive to get utilities to improve risk communication.

Information gaps:

- Generally no information is provided about risks for women not of childbearing age or without children, which may lead to a false sense that the risk doesn't apply to them - is it all right for some people to be exposed to lead, but not others?
- Need to put risk in context

Open communication and proactive, collaborative communication with state regulators is critical.

Messages for Diverse Audiences

Challenges:

- Integration of regulatory-defined language with public health information.
- Bureaucratic process (i.e., systems finding out if they have exceedances, sample processing).
- Agreement among stakeholders so the primacy agency can present information, if appropriate.
- Definition of target audience (different zones of system, different backgrounds).
- Message delivery (e.g., news media, door-to-door dissemination).
- Small utilities don't have the resources to develop their own messages.

Solutions:

- Develop simple messages, but provide links to more complex information.
- Need a baseline message; perhaps a threat level indicator (similar to homeland security) would be useful.
- Partnerships need to be ongoing, not put together at the time of a crisis.
- Develop risk communication templates for small and medium systems.
- Provide risk communication education as part of operator training and certification.
- Develop a drinking water advisory group comprised of drinking water officials and lead prevention program personnel.

Risk Communication Competency

Risk communication gives the public information to accurately assess risk and make informed decisions. Delivering information effectively engenders trust and allows action to resolve the situation.

Issues:

- Identifying organization and community goals.
- Identifying relevant publics and potential partners (prior to crisis).
- Developing media relationships.
- Accessing risk communication expertise (e.g., proficient practitioners).
- Putting risk in context.
- Risk communication plan must be in place before crisis.

Challenges:

- Allocating resources.
- Lack of appreciation of the importance of risk communication.
- Overcoming desire to let things "blow over" and the belief that order and logic will prevail.
- Lack of communication skills.
- Developing and maintaining relationship with the public, the media, and stakeholders.

- Overcoming resistance within the organization.
- Developing a clear set of messages.
- Dealing with an emotionally-charged situation.

Strategies and solutions:

- Define risks.
- Develop a clear set of messages.
- Provide training (media, communication, partnership development, crisis communication).
- Develop interactive methods to understand public perceptions, knowledge, and special needs.
- Build organizational support through examples of others.
- Identify potential benefits of the program and/or risks of inaction.
- Scenario planning.
- Evaluate past experiences.
- Create an evaluation process for future events.

Information gaps:

- Actual risks, hazards, and results.
- Potential unknown publics.
- Potential unknown concerns.

Risk Communication Strategies and Goals

For an informed public, the following actions can be taken:

- Explain exposure.
- Give options on what people can do to reduce exposure.
- Build, maintain, and increase consumer confidence.
- Create a two-way dialogue.

Solutions on how to get information out and increase knowledge:

- Work with credible parties.
- Make contacts in advance of crisis.
- Get across basic information.
- Develop message, get feedback from credible parties or focus groups.
- Determine the best way to reach the audience (e.g., oral delivery, who best to hear it from, how to work together)
- Develop an effective message internally (i.e., think of potential questions and answers beforehand).
- Look at successful strategies (e.g., return postage mailers can ask the public to explain what they learned). This can be done when the risk communication campaign is over, or periodically, if the campaign is long-term.

Other helpful tools include press releases, brochures, frequently asked questions (FAQs), fact sheets, talking points, Web sites, presence in credible partners' organization newsletters, articles, speakers, and workshops.

Public motivation:

- Engage credible partners - determine how to capture the public's interest.
- Talk about a community's largest concern (e.g., children, other vulnerable populations).
- Keep message simple and factual. Put the risks in context, but don't undermine the motivation of the listener to pay attention or take action.

The group briefly discussed a closing issue. Are public meetings effective? It's often a challenge to get people to come to meetings. Perhaps these meetings can be taped and broadcast on public television. It's most effective to become involved in existing meetings. Proactive involvement will include going to city council meetings, community meetings, PTA meetings, and other events.

Closing

Lisa Christ of EPA closed the meeting by thanking participants for sharing their time and knowledge with the group. EPA will work to compile all that they learned from this and other workshops and will follow up on the issues discussed in the various expert workshops.

**Appendix A
Public Workshop Participants**

Brenda Afzal	University of Maryland, Baltimore
Yone Akagi	Portland Water Bureau
Jeanne Bailey	Fairfax County Water Authority
Mitchell Basefsky	Tucson Water
Vicky Binetti	US EPA, Region 3
J. Paul Blake	Seattle Public Utilities
James Bode	St. Paul Regional Water Services
Barry Brooks	Centers for Disease Control and Prevention
Eric Burneson	US EPA, Headquarters (non-panelist)
Robin Casale	American Water Company
Lisa Christ	US EPA, Headquarters (non-panelist)
Mike Davis	Clean Water Action (Boston)
Derrick Dennis	Washington Department of Health, Division of Drinking Water
Carlton Gardner	Maine Rural Water Association
Ed Hallock	Delaware Division of Public Health, Office of Drinking Water
R. Wayne Jackson	Cobb County-Marietta Water Authority
Joseph Jimenez	Guild Communications (non-panelist)
Stacy Jones	Indiana Dept. of Environmental Management, Drinking Water Branch
Richard Maas	Environmental Quality Institute
Diana Neidle	Consumer Federation of America
Erik Olson	Natural Resources Defense Council
Paul Schwartz	Clean Water Action
Richard Talley	Fort Worth Water Department
Nikki Walker	Centers for Disease Control and Prevention
Charles Wood	Guild Communications (non-panelist)
Jonathan Yeo	Massachusetts Water Resources Authority

Attachment B

Issues Identified on Public Education Under the Lead and Copper Rule

- Partnering with other health agencies or organizations.
- Clarification of the roles of public health departments and public utilities.
- The Centers for Disease Control (CDC) and EPA can work together to develop broadbased public education. CDC may be able to provide better health information to health care providers.
- Get public to understand that the utility is not creating the problem and have concerned households tested for lead.
- Public education needs to be stepped up. Lead levels in water above 15 ppb doesn't automatically mean higher blood lead levels.
- Partnering can lead to better communication on multiple drinking water issues as well as better dissemination of information.
- It's important to look at implementation and compliance issues; resources are usually stretched thin.
- An information gap persists despite public education.
- It's important to educate the media on drinking water issues.
- Cultivate relationships with public health providers well before a crisis and involve them in the public education process.
- Conduct research into how much the public knows before a crisis, what people learn from a crisis, and whether they act on that knowledge.
- Messaging should be straightforward. Utilities should stop minimizing problems and admit risks. There is a need for openness and simplicity.
- What does it mean to have a lead action level of 15 ppb?
- Greater cooperation with other organizations, not just health groups, can be helpful.
- Content issue in messaging: how and what percentage of lead comes from other sources?
- With regard to lead, the public often sees drinking water as the largest threat and dismisses other risks.
- Limit public education activities to maximize effectiveness.
- Clarify overall lead pathways and exposure.
- Mandatory language confuses the public.
- Ongoing information and communication between the utility and the community are important.
- Personalize message.
- Message delivery is critical (ongoing, persistent, repetitive). Put drinking water risks into perspective.
- Partnering can help establish credibility.
- How to evaluate effectiveness of public education?
- Shifting demographics require different technologies to reach them (e.g., targeted audience doesn't often have Internet access).
- Be accountable to customers.
- Consumers can take actions to reduce their exposure if they understand the risk.
- It's important to build public confidence.

- Take cultural and language differences into account.
- Ask customers what they want to know and how to get it.
- Some exposure water for testing doesn't accurately reflect corrosivity. In November, there may be a decision on whether to revise the standard for public health.
- There is not enough manpower to ensure lead-free product compliance. Standard 61 addresses all contaminants.
- Creating a dialogue is important in learning what the public wants to hear.
- Current regulatory language is a result of negotiations.
- With regard to risk communication, public concerns need to be addressed regardless of scientific concerns.
- The reading level of the literature may be too high.
- It's important to target efforts to maximize resource use.

Issues Identified on Risk Communication

- Timetable of delivery - get information to people who need to know as soon as possible.
- Consistency of message - it's important to ensure that procedures and numbers are the same in all venues in which they are distributed.
- Know what the consumer understands and needs and use that to craft the message.
- Take responsibility and take action. Apologize if it's your fault.
- Simplicity of message is critical.
- Put risk in context.
- Explain how the risks affect the target audience, work to motivate the public.
- Keep in mind that communities may not understand technical terms.
- Follow through on all promises or explain why it can't be done.
- It's important to build trust between utilities and EPA or other regulators. There is a perception that public education is punitive toward the utility and not informative for consumers.
- Be cautious about using the overarching statement, "Water is safe," especially in CCRs. Consumers may not have an incentive to read the rest of the report and it may foster future distrust if problems later arise. The tendency to reassure consumers can be misleading.
- Explain the need for lead service line replacement and the benefits of replacing private lines. Evaluate proposed solutions (e.g., filters may not be that effective).
- Definitive language is needed for MCLs vs. action levels. The concept of an action level, when all other regulated contaminants have an MCL, is confusing to customers.
- Public outrage can be mitigated if consumers have some kind of control. Offer actions the public can take: test water, filter or flush water, drink cold water, etc. Consumers are given the guidance "Flush, then filter," to get water from the main line, since most filters aren't certified to deal with high lead concentrations.
- Keep people informed and communicate availability.
- Believability and trust are important.
- Revisit negotiations that led to current LCR language to make improvements.

- Public education should be extended to utilities with typical or moderate lead levels. Utilities that have 90th percentiles less than 15 ppb give consumers the idea that there is no lead problem and, thus, no incentive for home testing, but there could still be a risk in some homes
- Health professionals are expected to communicate messages, so they need to be educated about drinking water issues.
- Is the overall system broken? Are the actions being looked at from the wrong perspective? Is a Presidential commission on drinking water needed?
- Building partnerships is important.
- Need a strong recommendation about what needs to be fixed with regard to lead information. There is concern that utilities can "hide" behind a 15 ppb lead action level.
- What is adequate testing? Can consumers be confident that their water is safe after one test or do they need to test more frequently? There is a lot of confidence in lab testing, but a number of different variables (e.g., plumbing configuration, sample source) can affect the outcome.
- Following basic layout suggestions in the Public Notification Rule Handbook. Templates can assist systems in successful community interactions.
- Schools are often overlooked in terms of water testing. Some schools switch to bottled water, but it may be more effective to use that money to improve infrastructure and address lead problems.