National Drinking Water Advisory Council

Conference Call: Deferred Discussion on Lead Service Line Replacement Questions

Meeting Notes

Friday, November 18, 2011

EPA Headquarters
Washington, DC

Prepared for:
United States Environmental Protection Agency
Office of Ground Water and Drinking Water
1201 Constitution Avenue, NW
Washington, DC 20004

ATTENDEES

National Drinking Water Advisory Council (NDWAC)

Olga Morales, Chair of NDWAC, and Rural Development Specialist, Rural Community Assistance Corporation Santa Fe, NM

Ms. Jessica Claire Godreau, P.E., BCEE, CPM, Chief, Water Supply Section, North Carolina Department of Environment and Natural Resources

Mr. Elston Johnson, General Manager, Public Drinking Water Program, Texas Commission on Environmental Quality

Ms. Maria Elena Kennedy, Executive Director, Quail Valley Environmental Coalition, Rancho Cucamonga, California

Ms. Sonja Massey, P.E., Chief, Groundwater Branch, Alabama Department of Environmental Management

Mr. Douglas M. Owen, P.E., BCEE, Vice President and Chief Technology Officer, ARCADIS/Malcolm Pirnie, Inc., White Plains, New York

Ms. Jennie Ward-Robinson, Ph.D., President and Executive Director, Institute for Public Health and Water Research

David Saddler, Manager, Water/Wastewater and Propane Dept., Tohono O'odham Utility Authority, Sells, Arizona

Lisa Sparrow, President, Utilities, Inc., Northbrook, Illinois

Ms. Marcia A. St. Martin, Executive Director, Sewerage & Water Board, New Orleans, Louisiana

Hope Taylor, Executive Director, Clean Water for North Carolina, Durham, North Carolina

Bob Vincent, Assistant Bureau Chief, Environmental Health Division, Florida Department of Health.

Ms. June Weintraub, PhD, Senior Epidemiologist, San Francisco Department of Public Health

Dr. Craig Woolard, General Manager, Water and Wastewater Utility, Anchorage, Alaska

Centers for Disease Control and Prevention (CDC) Liaison

Dr. Max Zarate–Bermudez, Epidemiologist, NCEH/Environmental Health Services Branch, Atlanta, Georgia

Science Advisory Board (SAB) Liaison

Dr. Jeffery Griffith, Chair, EPA Science Advisory Board Drinking Water Committee

Environmental Protection Agency (EPA) Attendees

Cynthia Dougherty, Director, Office of Ground Water and Drinking Water, OGWDW

Pam Barr, Director, Standards and Risk Management Division, SRMD, OGWDW

Eric Burneson, OGWDW

Carol Demarco, OGWDW

Jerry Ellis, OGWDW

Jamie Harris, OGWDW

Jeffrey Kempic, OGWDW

Mark Wer, OGWDW
Ajoke Agboola, OECA
Paul Wierenga, OECA
Valerie Blank, ORD
Nicole Shao, ORD
Leslie Darman, OGC
Glen Farber, OP
Tom Carpenter, SAB
Miguel Del Toral, Region 5
George Rizzo, Region 3
Andrea Porter, Region 5

Designated Federal Officer (DFO)
Suzanne Kelly, OGWDW

Members of the Public
Jesse Bernhardt, City of Dubuque, Iowa
Scott Biernat, Association of Metropolitan Water Agencies (AMWA)
Graham Brannin, City of Tulsa, Oklahoma
David Cornwell, Environmental Engineering and Technology
Laura Dufresne, The Cadmus Group
Julie Frazier, Butler County Water, Pennsylvania
David Garcia, City of Riverside Public Utilities, California
Denise Garrett, Washington State Department of Health
Lee Garrigan, Environmental Council of The States (ECOS)
Cathy Gillinham, City of Tulsa, Oklahoma
Carla Glaser, New York City Department of Environmental Protection
Erik Gustafson, Caro Gordo County Public Health, Iowa
Boris Hrebeniuk, North Carolina Department of Environment and Natural Resources
Stacy Jones, Indiana Department of Environmental Management
John Kmiec, City of Tuscon Water, Arizona
Charles Maddox, City of Austin Water Utility, Texas
William Maier, Board of Water and Light
Paul Niman, Massachusetts Department of Violence Protection
Darrell Osterhodt, Association of State Drinking Water Administrators (ASDWA)

Members of the Public (continued)

Amena Saiyid, BNA
Ann Sandvic, The Cadmus Group
Steve Schneider, St. Paul Regional
Chet Shastri, Three Rivers Filtration
Matthew Smith, Philadelphia Water Department, Pennsylvania
Rick Tecchio, United Water
Steve Via, American Water Works Association (AWWA)
Lucy Wan, Edonik
Greg Welter, OBrien & Gere Engineers

1. Meeting Agenda

November 18, 2011

10:30am	Open Meeting	NDWAC DFO, Olga Morales, NDWAC Chair Cynthia Dougherty, OGWDW
10:30-10:40am	**Recap of Questions Posed to NDWAC at July 21-22 Meeting:** A. LSL replacement requirements under the current LCR: 1) Should the requirement for partial LSL replacement continue? 2) Should the requirement for partial LSL replacement be eliminated in favor of full replacement? B. Voluntary/infrastructure partial LSL replacement that are not currently subject to LCR Requirements: 1) Should there be notification and sampling requirements for these instances? 2) How would these requirements be imposed and enforced when the systems are in compliance with the Rule?	Pam Barr, SRMD
10:40-10:45am	**Recap of Previous Council Member Discussion:** • Summary of last meeting discussion including the decision to defer recommendations until SAB report was finalized	Council Chair Council Members
10:45-11:15am	**Final Science Advisory Board Report: Evaluation of the Effectiveness of Partial Lead Service Line Replacements:** • Final report findings • Q/A	Dr. Jeffrey Griffiths, Chair, EPA SAB Drinking Water Committee NDWAC Council Members
11:15-12:15pm	**Council Deliberations and Recommendations:** A. LSL replacement requirements under the current LCR: Questions 1 & 2 B. Voluntary/infrastructure partial LSL replacement that are not currently subject to LCR Requirements: Questions 1 & 2	Council Chair Council Members
12:15-12:30pm	**Wrap Up and Adjourn**	Olga Morales, NDWAC Chair Cynthia Dougherty, OGWDW

2. Meeting Summary – Friday, November 18, 2011

A. Open Meeting

Opening Remarks

Ms. Suzanne Kelly, the Designated Federal Official for the National Drinking Water Advisory Council (NDWAC), opened the conference call. On behalf of Cynthia Dougherty and the Office of Ground Water and Drinking Water, Ms. Kelly welcomed and thanked the Council members for attending this off cycle conference call.

Ms. Olga Morales, Chair for NDWAC Council, stated that the goal of today's call is for the Council to conclude discussions on the questions posed to the Council during the July face-to-face meeting related to the Lead and Copper Rule (LCR).

Ms. Pam Barr, Director of Standards and Risk Management Division (SRMD), recapped the lead and copper rule questions raised to the Council at the last meeting:

A. Lead Service Line (LSL) replacement requirements under the current LCR:
   1) Should the requirement for partial LSL replacement continue?
   2) Should the requirement for partial LSL replacement be eliminated in favor of full replacement?

B. Voluntary/infrastructure partial LSL replacement that are not currently subject to LCR Requirements:
   1) Should there be notification and sampling requirements for these instances?
   2) How would these requirements be imposed and enforced when the systems are in compliance with the Rule?

The Council had decided to postpone discussion on these questions until after the Science Advisory Board (SAB) report on lead service line replacement was issued: Ms. Barr stated we are pleased that Mr. Jeff Griffiths could join us today to discuss the SAB report. She also asked the members to keep these questions in mind as you hear his presentation.

Dr. Griffiths thanked the Council for the opportunity to discuss the SAB report findings. The SAB was charged with 5 questions related to partial lead service line replacement:

1. Review literature on blood levels of lead and partial line replacements.

Dr. Griffiths stated that they identified only one paper that deals with childhood blood levels and partial lead service replacements. This paper looked at blood lead levels in children in Washington DC from the childhood lead poisoning prevention program and matched where children lived with information from the DC Water and Sewer Authority. The paper compared lead levels in two groups of kids, those living in households with and without service line

replacements. Additional information was included about whether partial lead service line replacement leading to the household of that child.

The paper found a statistically significant relationship between the presence of lead service lines and children having higher blood lead levels. This relationship was strongest between November 2000 to June 2004 when chloramines were used for disinfection and corrosion control had not been optimized.

The paper also noted that a partial lead service line replacement was not associated with reduced lead levels in children. The period of time between the partial lead replacement and the lead test on the child on average was 10 to 11 months. They found a trend (not statistically significant) to higher levels of lead found in the children that may suggest higher exposures from partial lead service line replacement.

The group calculated what the likely mean blood level would be in an infant fed formula assuming the use of public water with lead levels cited in the paper. With water lead levels above 10 micrograms per liter, the number of children who would have blood lead levels above 5 micrograms per deciliter would be about 20%. At water lead levels way above the action level of say 30 micrograms per liter, an older infant taking in a 1.5 liter of formula per day would have a blood lead level above 5.

We concluded in our report that there is no benefit from partial line replacement. We found no evidence that supports the use of this as an effective or safe way to decrease the blood lead levels in children. There was a suggestion of harm in the trends toward higher blood lead levels in children. There were some design limitations of the study as well but the conclusion still stands.

2. Review studies of tap water lead before and after a partial line replacement.

We found quite of a number of studies available with very different sampling protocols, durations and locations that are listed in Appendix C of the report. One study that I have been using to discuss this was a study done about 20 years ago. Samples were drawn 10 days before the line replacement and then five to 16 days afterwards, or a week or two weeks afterwards, and then at two and four months later. Overall the weight of evidence suggests a consistent rise in lead levels in tap water after a partial line replacement, and the period of time for which this rise persisted varies in the studies between weeks and months.

Dr. Griffiths stated it was difficult to make any exact conclusions about what would happen at a particular site after a partial lead service line replacement. But he stated that the weight of evidence is clear that there is a consistent rise in tap water lead. It lasts for at least weeks to months and where it will come down to at some equilibrium later on is unpredictable.

3. What conclusions can be drawn about a partial line replacement vs. full line replacement?

There were a very limited number of studies to review and the follow up periods were often short. A full lead service line replacement often resulted in elevated tap water lead levels just

like partial replacement, however, the weight of evidence supports that full lead service line replacement results in lower lead levels in tap water in the long run compared to a partial line replacement. Also, evidence seems to support that optimizing corrosion control is an effective method for reducing tap water lead in the long run.

The panel also discussed the need for enhanced education. We recommended expanded education and much more vigorous education for people whose households having a partial or full service line replacement.

4. Is there a standard operating technique that can be developed for partial lead service replacements? For example, is there a way that one can gently remove a piece of lead pipe in such a way that it would dislodge as little lead as possible or in some way contribute to minimizing any spike in lead levels.

We found studies to be extremely limited and therefore it would be premature to make any recommendations.

5. The last question posed to SAB was related to galvanic corrosion and lead contributions. Corrosion occurs at the junction of copper pipe to lead pipe and at that place some of the lead will dissolve contributing to lead exposure.

We found evidence in the literature that substantial corrosion can occur and that the chance of liberating lead containing solids originally present in the corroded material is higher with the availability of free chlorine. However, we don't have much data on how often or at what dose the lead is mobilized during this corrosion. The issue with laboratory studies is they are done under artificial circumstances. However, we believe that because there could be higher rates of corrosion after you replace a lead pipe with a copper pipe at the junction of the old lead and the new lead. Therefore, we recommended that a dielectric be inserted if there was going to be a partial line replacement but we couldn't quantify the exact benefit in terms of reduction. We thought it is likely to help and unlikely to harm.

Dr. Griffiths provided an overall summary of their report stating that they believe partial line lead service replacement can result in an elevation in drinking water lead that poses a risk to the population for a period of at least weeks to months. Because long term data does not exist we were limited in stating scientifically how to ameliorate this issue such as identifying a mitigation strategy other than education and testing. Some members of the committee felt that the best mitigation strategy was to avoid partial lead service line replacement altogether.

Council Discussion:

Ms. Morales thanked Dr. Giffiths for his presentation and opened up the floor for council discussion.

Mr. Doug Owen: Was corrosion control good for mitigating lead in partial and full line replacement?

Dr. Griffiths: Most of the data around corrosion control was obtained from full line replacements. But there was some information both on partials and full, but it's not very extensive information. I would say the data is best for full line replacements, and in that circumstance, there was pretty good data supporting that corrosion control would blunt this rise.

Mr. Craig Woolard: What aspects were evaluated to make the assessment that corrosion control was in place?

Dr. Griffiths: In the relatively scanty number of reports that are out there, there was a variety of techniques used in the materials we reviewed, ones that we know are commonly used like ph adjustment, etc. We looked at whether corrosion control was in place or not in place. The report itself goes through the different studies that were looked at and I would have to go through all the studies for specifics on corrosion control. What we took of it was, was corrosion control present at the time or not, of the measurements and the pattern that we are seeing was that when corrosion control was in place and described as being not half of the chance, but good corrosion control, then lower lead levels were seen.

Mr. Craig Woolard: What I am hearing is that if a utility has corrosion control in place that helped improve the effectiveness of lead service line replacement.

Dr. Jeffrey Griffiths: Correct, in the long term we saw generally a lower lead level than had been present before the line replacement. There still a spike that occurs though, an elevation in lead that was usually seen but it mitigated. We don't know how high a spike in the absence of corrosion control. But the long term pattern was that in the long term, the leads were lower.

Mr. Max Zarate-Bermudez: Following up on corrosion control from issue 3, what does corrosion control mean regarding lower lead levels?

Dr. Jeffrey Griffiths: Let say there was a household where tap water lead levels were say 10 micrograms per liter, after the full lead service line replacement had occurred and data was taken months to years later, then the tap water lead level tended to be lower. If the lead level had been fairly elevated, there was a pretty good pattern of it coming down to far more acceptable levels. There was a pattern of diminution. If you started with very low water lead level and you then looked a year after a lead service line replacement, levels did not go down dramatically; rather we didn't see a pattern of elevation in the long run. There was almost always a strong spike seen however.

Dr. Max Zarate-Bermudez: Was this achieved through full replacement instead of corrosion control or were both taken?

Dr. Jeffrey Griffiths: Some reported full line replacement in the absence of corrosion control and some reported with corrosion control. The pattern one saw was that corrosion control was associated with lower lead levels in long run and at the height of the spike. Can be site specific. The pattern was that corrosion control was a benefit.

Dr. Max Zarate-Bermudez: I think that the recommendation is that full replacement in the long run is good vs. partial replacement. There is only one study one year after. Is it safe to safe

to say that one year is good for people to wait after full line replacement or we need to do more studies?

Dr. Jeffrey Griffiths: You need to do more studies and I think that everyone on the panel would be queasy about making a conclusion about the small number of studies. We were struggling with how to deal with studies that were done in different ways and often a real paucity of them. We can feel confident about the general pattern that was seen because it was so consistently the same but in terms of how long you have to wait, I don't know. It is probably very site dependent, it could be that there is solid lead from the corroded pipe that has moved into the household, maybe someone could flush out quickly? I don't know the answer to your question.

Ms. Morales: First question is, should the requirement for partial lead service replacement continue? I am going to turn it over to the Council, so please state your name before you provide the comments so we can start with the process.

Ms. Lisa Sparrow: I didn't hear anything at all that scientifically supports the continuation of it or that full replacement is better.

Mr. Craig Woolard: I would agree.

Mr. Doug Owen: I agree that it doesn't sound like there is any evidence that partial lead service line is a benefit. But I didn't catch the piece about full line replacement.

Ms. Lisa Sparrow: Yes. I don't hear any scientific data for that either.

Mr. Doug Owen: In following up to that and this is a question for clarification to Jeff. I thought I did hear you say that if there was a full lead service line replacement, that over time that water lead levels could decrease to below what they were originally before the full line replacement and if you had optimal corrosion control that seemed to help mitigate the temporary increase, that could be for weeks or months, after full lead line service replacement. Is that correct or incorrect what I just said?

Dr. Jeffrey Griffiths: We thought that there was evidence over the long term that full lead service line replacement would very likely lead to lower lead levels and that the data overall, that would be the take away.

Ms. Lisa Sparrow – but we didn't know when that would happen, correct?

Dr. Jeffrey Griffiths: That is correct. If you replaced the full line, the weight of evidence was that at the end of the study period where they had examined it, tap water lead levels were then either the same or lower. Not the same or higher, but the same or lower.

Ms. Lisa Sparrow: Did they separate whether it was same or lower – was "same or more" one category?

Jeffrey Griffiths: I am saying, let's think of this simplistically - if there higher, the same or lower. There was at least a suggestion, in the data if you started with fairly high lead level and did a full line replacement, you would likely end up with a lower lead levels afterwards. We did not see any pattern if you started with a low lead level and had a full line replacement you ended up with a higher level. Full line replacement led to benefit, frequently, and we didn't see much evidence if any that it led to higher lead levels.

Ms. Lisa Sparrow: Can you separate that into the short and long term on that because I thought I heard in the short term there was, long term there wasn't and we didn't know when those inverted?

Dr. Jeffrey Griffiths: That is right, we don't and this was very frustrating and so we are dealing with a real lack of information as to when that happens. As a scientist, I would want to do something where I got a lead level every week or something like that, and followed up with some long period of time. There were almost no studies like that. What people did is they looked beforehand and maybe right afterwards, then maybe weeks, then a couple of months later. Timing of when things got better differed and of course, each of these studies, each was a different system and they each had different things they were doing. No question that full line replacement was also associated with a spike in lead levels afterwards and that it was with the long term, years, that what we saw a pattern of lower lead levels.

Dr. Max Zarate-Bermudez: Refers to page 14 of the report, and paraphrases third paragraph and interprets findings. Dr. Griffiths agrees with the interpretation that Max finds in the data.

Mr. Bob Vincent: I am concerned about question 1, about partial lead service line replacement continuing. And when I look at the report that Dr. Griffiths is describing, I focus in on this statistical validity and the limitations and caveats on this interpretation of this ground report. And I have to look at Page 6 and just reiterate in my mind and perhaps Dr. Griffiths would like to comment. You say there are number of design limitations that preclude reliance on this single study as the basis for final conclusions about the relationship between lead levels and partial line service lead replacements. And then you list eight of them.

Dr. Jeffrey Griffiths: We have caveats about the literature and the studies. Having said that, that is the study that is out there and while there are things that we believe could have improved the study, that is what the data shows. Let me give you an example however of one of the ways in which this limitation on the data might make you think that the study underestimated the risk. When the study is done, there sometimes would be a number of lead levels available for the child. In order to come up with a conservative estimate, if you read the paper, they used the lowest level, you could imagine a child with 5 or 6 samples done, which was done for a reason because of suspicion, and the conservative thing to do was to use the lowest level. The reasoning for this if you did a finger prick test, it's possible that there was lead dust and you need to clean the skin thoroughly, but if there was skin contamination, that would falsely elevate the lead levels that were seen. Maybe they did a good job cleaning kid's skin and no lead there, so taking the lowest level might not have been the most accurate or valid or potential lead measurement

that could have been used. There was quite a bit of discussion about what the lead levels were closest to the time of the partial lead service line replacement. That was not done in the study and that was a caveat. Having said that, this is one study, but the only study available. And that study did not show any benefit. There was no decrease in the kids leads after partial replacement. Lots of caveats, but we looked at it in brutal detail. The take is that it is not reassuring; it was exactly the opposite of that given the trend toward higher blood lead levels.

Mr. David Sadler: I have gone through the report and listened to the summary. I think it is fair to assume that there are some major issues with the partial service line replacement. There still a lot of questions about full service line replacements. Long term affects may be beneficial, it appears corrosion control is probably the most effective method but then you get into some reasons, some of the different studies and questions posed of the problems you get into even with full service line replacements. When you look at the internal materials used in house plumbing, i.e., copper vs. other materials out there, I struggle other than a recommendation on partial service line replacements, with trying to come up with recommendations when there is so much ambiguity as far as what's out there to look at and try to come up with a determination on recommendations. It bothers me when you look at the overall effect and the associated cost and impacts on its own. That is my take on it now.

Ms. Jessica Godreau: Related to the LCR requirement on lead service line replacement under item A, talking about the two questions. It seems pretty clear from the studies of the partial service line replacements, at best there is no benefit, at worst determinant. It seems pretty clear to me that the lead and copper rule should not mandate partial lead service line replacement. As far as eliminating that in favor of full replacement it seems clear that there is a little more evidence that there could be some benefit, but as we are talking about rule making, I have to also consider legal requirements and the applicability and the ability for systems to comply and I would have difficulty supporting the recommendation that would require water utilities to mandate that they replace water lines that they do not own, operate, control in private ownership on private property. So I do not favor eliminating the partial lead service line replacement in favor of a requirement for full replacement.

Ms. Lisa Sparrow: Well said, I agree. I would add before I would be willing to support the "in favor" piece of it, I would want to see more data and I also think there are other issues that people need to think about. Even if long term it works, we also know short term there is a rise and that is something that needs to be looked at. As a home owner, and with one baby now and one baby on the way right now, I would flip if someone would change my line now. If they wanted to change it a few years from now after my child's brain isn't still like in major development mode, then that would be something else. But I think there is so many factors that go into the timing of it, we need more data and we need to consider the wide ramifications of it.

Ms. Maria Kennedy: I have a comment**.** What about renters? Not everybody is a homeowner. What about people who are low income/minority – aren't they not afforded protections especially if there are still questions about the effect of lead on children's developing brains?

The child of privilege isn't at a higher level than a low income/minority child. To just concentrate on homeowners is not being fair.

Ms. Lisa Sparrow: I agree. I said homeowner because I am a homeowner. It's anybody living in the house. And I actually think that renters can be lower or higher income. A renter is even in a worse case because I really don't see the landlord coordinating, or knowing or caring about who the tenant is, so I think it gets further complicated.

Ms. Maria Kennedy: There are regulations, the landlord at least has an onus to do that.

Ms. Pam Barr: To clarify, even in our current regulations, they typically hang something on the door, so it is not just that it would go to a homeowner and not a renter, it would go to the person living in the house by hanging on the door.

Ms. Lisa Sparrow: We are talking about making changes to people, that maybe long term the person in that home gets the benefit of it, but in the short term it's health damaging to them. My point is that it's far more complicated than this conference call and I don't think there is enough here to be able to vote in favor of it. Other things need to be considered if you are talking about recommending a full replacement.

Ms. Pamela Barr: Even in our current regulation, it is required that they go door to door. So it's not just that it would go to a homeowner and not to a renter, it would go to the person living in the house.

Dr. Jeffrey Griffiths: Maybe I was unclear. The reason I went through the business about there being a table in the report is that based on the data we saw, we found clear evidence that these spikes could result in permanent harm to an infant. One of the things is that you can be chronically exposed to lead and have chronic problems. Or you could have short term exposure. But some of the levels that had been reported and the duration of persistence, if there was a child who was on formula at that time, then it was quite clear that there was a portion of those children who would end up with permanent harm. Not something that was transient or something like that. I don't want to underplay that. I want to make that quite clear. I would also like to make it clear that during the deliberations on the report, the full SAB reviewed it. A number of people found this information - the best word I can use is alarming.

Mr. Bob Vincent: Could I ask a question of Pam or Cynthia? Can you do a moratorium or suspension of the partial lead service line replacement - in waiting for additional research and studies for two or three years?

Ms. Lisa Sparrow: That's a good question, because I think it's frightening.

Ms. Pamela Barr: What we would typically use in this case is enforcement discretion to move quickly. I have someone from the Office of Enforcement and Compliance Assistance (OECA) here if you want to know more. To revise the rule would take multiple years.

Mr. Bob Vincent: That was my concern. Because you couldn't get it written in the rule quickly, and so a moratorium of an enforcement action or a directives for enforcement actions would be the way to go. That might not manage the ones though that are done voluntarily that you wanted to talk about later and that might be a directive as well. But it does sound, obviously that the partial line replacement is not a good idea at this time.

Ms. Pamela Barr: To clarify, on the ones not covered under the rule, there is not anything we can do unless we do a rule. For the voluntary infrastructure replacements, we can issue guidance, we can issue recommendations, but in order to take an enforcement action it must be based on regulation.

Ms. Lisa Sparrow: But you can come out with a statement that says you have enforcement discretion and do not intended to enforce.

Ms. Pamela Barr: If the water system were not in compliance they would be consulting with the state primacy agency

Ms. Lisa Sparrow: I am more concerned if they are in compliance and they are moving along and doing stuff so they are not in touch with anyone.

Ms. Hope Taylor: I would agree with that. I think this requires a more active level of notification than simply a decision not to enforce in order to deal with these voluntary situations.

Mr. Bob Vincent: To the question about in favor of full replacement, at full replacement is complicated and where it's possible certainly that is a good idea but the not utility owned barrier is always going to be the issue. I like the thought of appendix C, was hook lining and type coating and I don't know what the regulatory and practical aspects of that are but that was mentioned in appendix C is a potential. I think that ought to be explored and encouraged where it can be done.

Ms. Olga Morales: Thank you Bob. Anyone else?

Ms. Lisa Sparrow: Are you talking just on the mandatory replacement under the lead and copper rule at this time, correct?

Ms. Olga Morales: We are still under "A" as far as I am concerned. Are we ready to make a recommendation? Do we want to make a recommendation?

Mr. Bob Vincent: And that talks about other methods of protecting the water from lead and one is by coating the interior of the pipe with a chemical additive or plastic liner and then slip lining is the same thing. They are not easy to do for these small diameter pipes and it implies in appendix E there were some regulatory barriers as well but I don't know what those are.

Ms. Olga Morales: Jeff, do you have anything to offer now?

Dr. Jeffrey Griffiths: It's an attractive concept and the amount of data out there, where someone has actually tried it, is almost negligible. So it's an interesting concept and if you wanted data to show that it actually worked, it's not really there.

Dr. Craig Woolard: And I think that's just because it's the small diameter pipes. It's happening all over for sewer pipes, two inches and above, lead service lines are typically half inch in diameter.

Dr. Craig Woolard: Where I am struggling with, I agree, seems like it's an approach and technology with potential but at this point we are talking about requirements of the rule. And it seems to me from the discussion, the data suggests that requiring partial service line replacement is not a good idea. The data also suggest that substituting full lead service line replacement for partial lead service line replacement is also not a good idea at this point and it doesn't seem to me that there is enough information out there to require some alternative technology.

Mr. Bob Vincent: Well, I am not suggesting requiring, but incentivize it if it is possible and technologically feasible and practically feasible because we are going to see lead as an issue for many more years and if we are getting rid of one of the replacement options than there ought to be options out there for individuals and utilities that want to try those things that might work.

Dr. Craig Woolard: And I agree 100%. I want to be clear on the requirements part, I think it has a lot of potential. Requiring it was where my hang up was.

Ms. Lisa Sparrow: I agree. Are we ready for a motion?

Ms. Olga Morales: I think we are.

Ms. Marcia St. Martin: Olga, before we take a motion. Can we hear the EPA thoughts on compliance and rule compliance and if there was a change how would utilities report compliance?

Ms. Marcia St. Martin: My question is if the rules would be suspended or allow for utilities that are compliant to move away from partial line replacement, how would that be communicated and how would a utility report continuous compliance.

Mr. Eric Burneson: In the context of the rule revision which is what we are really seeking, the agency currently has a requirement that when a system is exceeds the action level, if the system has lead service lines in their inventory, they must undertake a program in which they replace 7% of lead service lines a year. The replacement requirement specifies that they need to contact the homeowners in advance and offer to replace the entire line but for the portion that the homeowner owns, the cost of that is the homeowner's expense. They are not required to pay for it. If the customer does not accept that option, the utility must still pursue and complete a replacement of the portion that the utility owns. If the agency were to modify this requirement, the requirements would not compel the utility to replace the line in the case where the homeowner refuses or is unable to pay for the portion of the line, and the utility would then be

obliged to basically identify as many of the lines that they could replace as are possible. Other potential options associated with this would be the current mitigation measures that are in place right now as Pam has alluded to. They have to identify them, give the information to the occupants of the home in advance, advise them of the potential increase in the short term and then give them advice about taking actions such as flushing their lines following the replacement for a period of time, and then follow up with sampling within 72 hours of replacement and give them the copies of the results. There could be other mitigating requirements that could be put in place that would address these short term spikes, more specific and better flushing recommendations to occupants of households, other measures such as filters, or other measures that could reduce initial return of elevated levels of lead. Those would be the types of mitigating measures that could come into play here. Of course the degree to which systems are going to be able to achieve full lead service line replacement or getting acceptance is going to revolve around the ability or the willingness of the occupants of the households to pay for that replacement and/or the degree to which control is defined. I want to pause here and see if folks understand the concept here. We are talking about changing those regulatory revisions. In this interim measure, for utilities that are in that situation, the state primacy agency, or the agency with direct oversight, could exercise discretion in how they choose to enforce or compel systems to undertake partial service line replacements or the lead service line program as a whole. That would be the enforcement discretion provision that we are talking about here, an aspect of the report I want to make sure folks were aware of. I realize the concerns about elevated levels of lead following partial and full, but the report does describe on page 11, the next paragraph to the bottom, the situation of spikes occurring even in intact lines that remain untouched, particularly in situations where there is lead scale buildup. I wanted to see if Dr. Griffiths had any comments on that particular phenomena. I want to make sure that folks know that even with untouched lines, there is this potential for spikes.

Dr. Jeffrey Griffiths: Yes, that is quite clear. If you are drinking water that has been sitting, stagnating, next to a lead pipe, there is pretty good evidence that you are going to get water with an elevated lead level. I know of information that has arisen since this report was finalized, which would strongly corroborate that statement. No one should be under any illusion that lead spikes don't occur even without a replacement.

Ms. Olga Morales: Any other questions? Do we have enough information to make a motion?

Ms. Jessica Godreau: I make a motion to recommend that EPA should not require either partial or full service line replacement under the revised lead and copper rule, and in addition, should issue guidance on the possible negative health impacts related to compliance with the current lead and copper rule and their intent to suspend enforcement.

Ms. Lisa Sparrow: I second.

Ms. Olga Morales: Do I have any discussion from the Council?

Mr. Bob Vincent: Did you include full replacement in there?

Ms. Jessica Godreau: Yes I did include the full replacement.

Mr. Bob Vincent: I heard you say that but why?

Ms. Jessica Godreau: As I was saying before, I think it is very difficult to mandate a water system to go onto private property and deal with private infrastructure and to mandate that. And I put that together with some of the initial elevated levels and it doesn't seem worth mandating it to me.

Ms. Lisa Sparrow: I would add that we still don't know where that break is, when does it get better? And we also know that in the interim that it actually cause permanent damage. So not knowing when it gets better combined with we do know that it actually causes permanent damage, I can't see any reason to support it.

Ms. Jessica Godreau: But it's mainly, don't think you can mandate a water system to take action on private property with somebody else's infrastructure.

Ms. Lisa Sparrow: I totally agree with that as well.

Ms. Olga Morales: Are there any further discussions from the Council?

Mr. David Sadler: "I call for the question" means that the discussion stops and we vote?

Ms. Olga Morales: I have to go through roll call because I can't see hands to see who is in favor of Jessica's motion:

- **Ms. Sonya Massey:** In favor of Jessica's motion.
- **Ms. Maria Kennedy:** I am opposed to Jessica's motion.
- **Mr. David Saddler:** In favor.
- **Marcia St. Martin:** In favor.
- **Dr. Craig Woolard:** In favor.
- **Mr. Doug Owen:** In favor
- **Ms. Hope Taylor:** I'm in favor, but only if there is aggressive work by the Council in the future to work on migration strategies while we are getting more information on this.
- **Mr. Bob Vincent:** Not in favor of it because I think full service line replacement is a viable alternative in many situations.
- **Ms. Lisa Sparrow:** I'm in favor.
- **Ms. June Weintraub.** Abstain, because I joined the call late and missed a lot of the discussion.
- **Ms. Jessica Godreau**: In favor.

Ms. Olga Morales: Does this capture both A1 and 2 issues or do we need to have our discussion on 2.

Ms. Jessica Godreau: In my opinion it addresses 1 and 2.

Ms. Olga Morales: Alright moving on to B, if there are no further discussions, can we move on to B?

Mr. Max Zarate-Bermudez: I have a question. There was a motion by Hope and Bob that had some confidence. Hope said in favor only if the council is aggressive in mitigation strategies and Bob not in favor because he thinks that full replacement is a viable alternative. How are those opinions reflected in whatever the Council will record with regards to this motion?

Ms. Olga Morales: They will be reflected in the case of both we can say the fact that Bob sees the value of full service replacement and the same goes for Hope. Even though most of the Council voted in favor of, it's valid to state the fact that there are some reservations and we can make some comments in regard to that. When we have the opportunity to review the recommendations that are drafted and put together, we make sure those comments are captured.

Mr. Max Zarate-Bermudez: thanks.

Ms. Olga Morales: Are we ready to move onto B? We have just over ½ hour so we probably need to move a little faster on this one.

(Olga reads B below to the Council)

B) Voluntary/infrastructure partial LSL replacement that are not currently subject to LCR Requirements:

1) Should there be notification and sampling requirements for these instances?
2) How would these requirements be imposed and enforced when the systems are in compliance with the Rule?

Mr. Bob Vincent: Question to utilities. Do you know where all your service lines are?

Ms. Lisa Sparrow: The short answer is no. We can't say with any conclusion say what is on the customer side. But in terms what ties in with our main – you know, we have decent ideas about, you certainly know when you are digging it up to replace it, and you have ideas that were more likely than others, but do you know every single house to say this house is bad, no we don't have that, but you certainly know when you are digging it up.

Ms. Pam Barr: That is what we have generally heard around the country, but there is not a real good inventory of lead service lines. Partly if you think about it these were put in the ground decades ago.

Mr. Bob Vincent: And is it true that certain housing age stock is more prone to them?

Pamela Barr: Yes

Mr. Eric Burneson: There was a period of time when that was the material of choice, those homes constructed in that era are going to be prone to having these lines. I think it is rare that a utility knows and has an exact inventory of every service line in particular.

Mr. Eric Burneson: The era varies, city to city, when lead was the material of choice. There is some very distinct time frames in different metropolitan areas. Another observation nationally is that the Northeast, the Midwest and to some extent, the Southeast are probably places where lead service lines predominate. This does not seem be an issue in the Western US by virtue of when those cities developed and I can say that while there is a materials inventory associated prior to the rule, the rule was designed really to help systems where they would have to sample. It was not intended to be a completed inventory of all those service lines and even that estimation isn't reported to the agency at this point. So we don't have a national means for knowing where those service lines are located.

Ms. Olga Morales: Thank you Eric. Council members?

Dr. Craig Woolard: It seems clear to me that there should be some notification of homeowners when the service line is being disrupted for any reason based on what we have learned. But there should be some notification, certainly some notification requirements. I'm still unclear about sampling requirements. The sampling requirements we should discuss, what is the best approach there? But certainly there should be some notification requirements if you are disrupting lead service lines for any reason.

Ms. Olga Morales: I totally agree. It sounds like any disruption for whatever reason is going to hemorrhage.

Ms. Hope Taylor: I would agree. I thought I was picking up that there could be disruption in lead spikes even when it was not clear a lead service line was the only thing being replaced. Do we have evidence for any replacements that very seldom cause lead spikes?

Ms. Olga Morales: Hope, are you talking about for example if they replace a main attached to a lead service line?

Ms. Hope Taylor: Yes, something that was adjacent to a lead service line but not the line itself.

Dr. Craig Wooland: So many variables that get involved in spikes, that is a real open ended discussion. You can get dynamic changes in your system, pressure increases or changes in directions and all of that impacts spikes in your water quality data. Suppose its a discussion that could be ongoing for a long time.

Ms. Hope Taylor: But I guess that was said in the sense of precautionary view of not only notification for replacements but of at least some level of testing as well.

Dr. Craig Woolard: Just to clarify my position on it, my thought was that if you touch that service line, then there should be some notification requirement. I would agree that changes in pressure or flow in the main, those kinds of things I guess theoretically have a potential to impact service lines, but the practical reality including those that are unmanageable. But I do think if you are digging it up, and you are touching the service line, you have a high potential of disrupting that lead film and causing a spike and there should be some notification requirements.

Mr. Bob Vincent: I agree. There is no question that there is going to be a lead release so let's make sure there is notification.

Ms. Maria Kennedy: I agree with that and that also goes along the lines of the respect for private property because if you are going to be affecting my private property then the onus should be on you notifying me. I don't think there is an inconsistency in that logic.

Ms. June Weintraub: I agree with the notification. I have a question. When a lead service line is being replaced that leads to a particular property, is there an opportunity for adjacent properties to also experience an elevated lead that we have seen in the partial service line replacements on the current property and or do we not know that?

Mr. Eric Burneson: I am not aware of studies where partial lead service line replacement has affected adjacent properties. I think the situation you are worried about is sort of a back flow situation where water would be drawn out of the surface line back into the main and then into adjacent properties in which case I am not aware of such studies that have examined that. I don't know if Dr. Griffiths has seen any of that in literature that he has looked at.

Ms. Olga Morales: The concern and question that June had has to do with the change in pressure and if that impacts the site to adjacent properties even those that are in the isolated area where repairs are being made.

Ms. June Weintraub: You have interpreted correctly. I think this could happen if there is back flow or just a change in the way the water moves through the pipe, I suppose it would have to be moving backwards in order to cause a problem on the adjacent property once you reconnected. And so I guess it probably depends on the configuration. It sounds like a question for another day. Where I was going with this, who are we notifying with this? A related question would be when a partial service line replacement happens, do they tend to happen one at a time, or often a whole blocks worth of work that is going on? So naturally an entire neighborhood would be informed by a notification requirement.

Ms. Olga Morales: I think there is a possibility for both June; you have the possibility to just do, if a utility has the funding to do infrastructure replacement and they are doing a project, a planned out project and they will impact multiple households. And then there is the one where there is a leak or there is an emergency, so it's different.

Mr. Bob Vincent: I have spoken to utilities saying that they are more often replacing mains in older neighborhoods and the older neighborhoods have the lead lines. So, they do them quite often in block by block and section by section areas.

Ms. Olga Morales: So I think that the Council is in agreement that the notification needs to happen. What I am hearing from all of you is that the households/occupants should be notified regardless. The next question is the sampling requirement. I think there is a lot more discussion from now on because it's kind of unknown at this point? Are we ready to do that portion of the question?

Jessica Godreau: I think that it actually might be worthwhile, separating those two issues and motions.

Mr. Doug Owen: I agree with that.

Ms. Olga Morales: Can someone make the motion?

Dr. Craig Woolard: I started the discussion so I will make the motion. And I do think it's a good idea to separate the two. I will make a motion that there is requirements in the revised rule to notify the homeowner if a lead service line is touched by the utility for any reason.

Ms. Maria Kennedy: I second that.

Mr. Bob Vincent: I vote yes.

Ms. Pamela Barr: This is EPA. Could someone clarify "touched" for us please?

Dr. Craig Woolard: Yes, when it came out of my mouth I realized that is probably not a great word. Maybe a better way to characterize it is if the utility does a repair on a lead service line for any reason, that the homeowner is notified. Repair or connection to are good words as well. The point at which you have a repair, or are replacing that service line so there is a potential for disruption there for, the homeowner, there should be notification requirements in the rule.

Ms. Olga Morales: The motion has been slightly modified but basically is to require notification whether for repair or a connection to a service line. Right?

Dr. Craig Woolard: Correct.

Ms. Olga Morales: So Bob, do you want to change your vote?

Mr. Bob Vincent: No, not at all. As David did last time, we could go ahead and call this question and vote on it I suppose.

Ms. Olga Morales: So lets' vote on it.

- **Ms. Maria Kennedy:** Yes
- **Ms. Sonja Massey:** Yes
- **Ms. Jessica Godreau:** Yes
- **Mr. Doug Owen:** I am in favor
- **Mr. David Saddler:** Yes
- **Ms. Marcia St. Martin:** Yes
- **Ms. June Weintraub:** In favor
- **Ms. Hope Taylor:** Yes
- **Ms. Lisa Sparrow:** In favor
- **Ms. Olga Morales:** Yes.

Ms. Olga Morales: So we are basically cutting that question into two questions or two motions. We have a motion….so let's go back to the second half of that question, "sampling requirements for these instances?"

Mr. Bob Vincent: Did EPA have some sampling suggestions that might be helpful

Mr. Eric Burneson: So currently there is sampling required 72 hours following the replacement and then notification going to the homeowners and that is of course in the situation where the lead service line replacement is subject to the rule. So one potential would be a single requirement, as it exists right now—where the utility is mandated to take lead service line replacement—and be applied to these situations where the utility is doing it for infrastructure and maintenance reasons. Obviously, the Council may want to discuss other more frequent or longer-term sampling requirements associated with that, but right now there is a requirement, 72 hours with notice going to the customers.

Dr. Craig Woolard: Those 72 hours samples, that information gets relayed back to the homeowner?

Mr. Eric Burneson: That's correct.

Dr. Craig Woolard: The 72 hour sample then goes into the calculation of compliance for the utility?

Mr. Eric Burneson: It does not. It's what referred to as a lead service line sample so the customer is instructed to flush the line to the point where it is representative of the water that has been in the service line. And as you may or may not recall the treatment technique is confined to that first flush sample. Those are two different episodes.

Dr. Craig Woolard: So it's fair to say that the sampling requirement right now is simply to just help the homeowner be aware of the issue that there could be elevated lead levels in their tap water because of the service line destruction.

Mr. Eric Burneson: That is correct. It's intended to reinforce the initial message they got regarding the potential for short term increases following the replacement. This is designed to give them the sense of the magnitude of that increase that they may be experiencing, to further motivate them to take action.

Dr. Craig Woolard: Do we have data to suggest just how effective it has been - how many people are actually doing the sample. It's an education component of the current rule. My question is, is it working? I think we are in agreement that we need to do some notification. My basic question is requiring that 72 hour sample, is really trying to make sure that the homeowner is aware and is that technique working or do we need to look at something else?

Mr. Eric Burneson: I don't believe we have data that tells us whether or not the sampling results have been effective and motivating customers. We have heard anecdotally that systems

have tremendous difficulty getting access or getting those samples to be collected especially in that 72 hour time frame.

Dr. Craig Woolard: Assist with the homeowner knowing whether they needed to continue to flush. I know some really tell people to flush for 2 or 3 minutes, so testing after the service line replacement if it were still positive for lead, they would know that they still needed to flush - kind of a rhetorical question I guess.

Ms. Jessica Godreau: I have a clarification for either Pam or Eric. In terms of current regulatory framework there is no requirement regarding notification or a sampling for these voluntary partial replacements. Is that correct?

Ms. Pamela Barr: Yes.

Ms. Jessica Godreau: So that moving to requiring this notification is a big step forward in terms of improving public health protection.

Ms. Pamela Barr: I think there are a number of people who would say so, yes. If you listen to what Dr. Griffiths was telling us earlier, and this is the majority of the replacements from what we believe.

Ms. Olga Morales: We have about 5 minutes and we need to wrap up our discussion.

Ms. Jessica Godreau: What was the use of that sampling data? Not used in a compliance calculation, it would be purely provided for information to the customer. I am wondering what it is that customer would be doing with that information. What is the expectation of the use? I guess like getting a new filter or something like that. To me it seems like getting that information out there is a step forward and is probably far enough at this point without any clear purpose for how that data would be used moving forward and what the implications would be.

Mr. Doug Owen: I am struggling to think about this based on what I heard from Dr. Griffiths. - What a sampling protocol would be developed that we could conclude would be informative and helpful overall because sometimes these spikes last for a little while, sometimes longer, and while certainly follow-up sampling may have value, trying to prescribe it could be potentially misleading at worse and maybe would give us some information at best. So the sampling thing does kind of open up a different can of worms in my world, beyond just trying to think about sampling is a good idea. If you do that, then the next question is what do you want us to do about it and I'm not sure that the data are informative enough to help me form an opinion on that.

Ms. June Weintraub: Following on that, I think that no matter what, any lead service line replacement is going to need to be accompanied by this notification that this is happening. I presume that would include some sort of recommendation that the homeowner consider doing replacement on their property and then recommendations for how to mitigate any potential water quality problems that could happen if they choose not to. And I think that we want utilities to give that guidance regardless. Given that we know if they did sampling it would be likely to

show that there is a problem and they just need to follow guidance to mitigate problems if they are not able to do the replacement on their property. I just think any sampling strategy that's compelled for the utilities is just going to open up too many unknowns as far as how to help the homeowners interpret it, how to interface with the resources to help them understand what the risks are. There just needs to be clear guidance about what the potential risks are, how everybody who chooses to not do the full replacement, needs to try to manage the potential risks associated with that choice.

Ms. June Weintraub: I don't think that the sampling is going to be helpful and that's not necessary.

Ms. Olga Morales: Is the Council ready to make a motion on that?

Ms. Hope Taylor: I want to get further clarification. I think a lot of what we have been talking about today is the lack of comprehensive science to make decisions about service line replacement among other things. While I understand that there would be some significant burden on utilities for interpretation, I wonder if there isn't some very simple protocol that would in fact lead to a lot more information in the future for making better decisions.

Mr. Bob Vincent: And I would agree. I think that all the data that is collected, that is held by the utility could be used for other studies. We have discussed these studies this morning that use old compliance data to compare with blood lead levels and water hammer and all the other things that occur in systems. I see it as an information collection rule - it certainly is going to be useful at some point in the future if it's not useful to the individuals at the moment. It seems to me that education component could be enhanced by testing and sampling. So I would be in favor of it but I don't know how to implement it.

Dr. Craig Woolard: My opinion is it's the requirement again. The requirement having the homeowner take a sample 72 hours after their service line has been repaired or replaced is where I have concern. I think our utilities' efforts are better spent doing better public notification, probably going to be more protective of the public health to make sure that the homeowner is appropriately notified and those materials are as good as possible and the guidance is as good as possible. I am not sure that it's a good use of everyone's time and money and resources to require that sampling. However, I would say that enhanced monitoring of some form as part of an effort to improve the overall corrosion control program that does make some sense. I just question the validity and usefulness of that required sample. It's very difficult to get that homeowner in many cases to participate; I believe that is the case. So what utility are we getting out of that data? It would be better if we need more data, to collect more data in a more systematic way. I think the data that comes out of those questions at least those 72-hour samples might be suspect or I mean anecdotal evidence anyway suggests that it is difficult to get the sample. So, I don't know that it is a good use of our time and money.

Ms. Hope Taylor: I understand the point of view about cost effectiveness for the education and the behavior change recommendations that come in the early stages. I was actually thinking of

about some of the time periods later, and would agree with you that maybe just expecting compliance from the homeowners is not the best approach but an enhanced random sampling in the appropriate areas would be the best way to track, but at a later time.

Ms. Olga Morales: Are we ready to make a motion?

Dr. Craig Woolard: I will make a motion that we do not recommend that EPA require homeowners sampling in a 72-hour period after a lead service line has been replaced.

Ms. Olga Morales: I am not going to take a roll call - I am just going to have those that are not in favor of the motion…

Mr. Bob Vincent: Clarification. Is the 72 hour the key concern, aren't you just talking about any sampling?

Dr. Craig Woolard: I'm referring to the current requirements for homeowner sampling after the lead service line replacement. My understanding is that is the issue on the table.

Mr. Eric Burneson: While we cited the existing 72 hour format, we were posing the question more generally to the Council. We will take the advice about just the 72 hour, but don't feel constrained to only giving advice about the 72 hour time frame.

Ms. Olga Morales: Can you make the motion to be more broad than the 72 hours?

Dr. Craig Woolard: Sure. I will change my motion to this. Our recommendation is to not have sampling requirements after lead service line replacements.

Ms. Jessica Godreau: I will second it.

Ms. Olga Morales: If you are not in favor of it, please state your name.

Ms. Hope Taylor: Once again, I would agree with that provided that Council looks aggressively at requirements for enhanced monitoring at some later time period TBD.

Mr. Bob Vincent: I would agree with that and add to that instructions are provided in the notification could offer the homeowner optional sampling and how to do that and what they might want to do privately on their own vs. what the utility would be mandated to do. I agree, that the utility does not need to be mandated to do it

Ms Hope Taylor: But those are not amended to the motion but comments?

Ms. Olga Morales: Those are comments, or would you want to amend the motion Craig?

Dr. Craig Woolard: Comments is what Eric is looking for. I am in favor of those comments and should be reflected in the record. I think those are excellent comments.

Mr. Doug Owen: Olga, I'm confused. I'm trying to think about the fact that we are doing lead service line. I agree with the motion. We shouldn't have to have any specific follow-up

monitoring and there is an education element for the homeowner. The outcome of that, just for clarification, there is no other special monitoring associated with this right, beyond what a utility is required to do. Is that correct?

Ms. Olga Morales: Correct. They would basically fall into the regular lead and copper schedule.

Mr. Bob Vincent: I have to vote no. I have to think about this a little bit more since we are going in and doing something on that site and is there any value to additional monitoring beyond just the routine. I am not in favor of what is currently in the rule, but I am not sure if it needs some kind of attention or maybe that is just a recommendation thing. Anyways, I guess I got to leave at that for now.

Ms. Olga Morales: Thank you Bob. Anyone else?

Ms. June Weintraub: My only comment is that moving back to what my original point was about the notification. We weren't really specific about what that notification included so I feel confident in voting in favor of no monitoring but only accompanied by assurance that any notification would include a careful communication about potential risk and how homeowners can mitigate that.

Ms. Olga Morales: We have all of the "no's" and that means the motion carries.

Mr. Bob Vincent: Is there a lead contamination control act that removed all the lead line water fountains, have ability here to require the notification when you tamper with or remove the lead service line? I don't know.

Mr. Eric Burneson: I don't think that the applicability of the LCCA falls in this situation. It's focused on schools and we are talking about the situation of infrastructure, generically about any lead service line replacement that takes place as a result of infrastructure maintenance/repairs or any other things that are going on that requires utilities to replace/repair lead service lines. We are asking for focus on some more specific guidance/recommendation as to how and when those notification requirements should be imposed and what enforcement oversight should come into play on these sorts of things.

Mr. Eric Burneson: Let me be more precise. In light of recommendation to the council regarding notification, we could use some more advice about the timing when that notice should go forward and contents of the notice. How could we ensure compliance that the system has taken the notification action?

Ms. June Weintraub: Some notification should be for required or voluntary compliance. Notification would include what is happening, what actions they should take and risks if they don't and mitigation options including monitoring, at their expense. Suggestions would be to flush for whatever amount of time we have determined is necessary to gain fresh water from the

main line. Three key parts for notification: recommendation for homeowners, risks if they don't, and mitigation techniques.

Ms. Jessica Godreau: Is there already some information that is provided to home owners under the current regulations as a partial service line replacements is given out and so what does that include?

Ms Pamela Barr: Homeowners only get information if it's a replacement under the rule.

Mr. Eric Burneson: Yes so that part of the notification that takes place, I believe 45 days in advance for the replacement to have to notify that residence that partial lead service line replacement was taking place and that's the time they have to offer to replace the customer's portion at the customer's cost. There is also information and the rule isn't very specific but there is information about advising customers that they will experience elevated levels of lead and providing recommendations about the actions the customers can take to reduce their exposure to those elevated levels of lead.

Dr. Craig Woolard: I would agree I think that's the core difference is that it wouldn't be routinely be a planned event, so the time frame is going to have to be adjusted. So what's in place now, but you know the reasons for the actions, the potential risks and the potential mitigations options are really what the notice should contain. I suggest sending written suggestion with no further debate on motion. Our discussion is around details of notification vs. concept of notification.

Ms. Olga Morales: All right. So, with that I think as follow up we have enough information from our discussions to draft our recommendations that includes suggestions for details surrounding notifications. With that I am going to stop our deliberations at this point and turn it over to Sue**.**

Ms. Suzanne Kelly: It is very important that the deliberations of the Council be open and transparent and that members of the public have an opportunity to make statements during these meetings. To this end, the Agency published a federal register notice on October 31 asking for persons to register if they wish to make an oral statement during the meeting and/or submit their written statement by the deadline of November 16. We did not receive any requests or statements by the deadline. If anyone on the line would like to provide a statement for incorporation into the meeting minutes and made part of the public record must do so in writing via e-mail to my attention.