

LOTT Clean Water Alliance

LOTT Groundwater Recharge Scientific Study **Community Advisory Group**

First Phase of Work Final Report

June 6, 2013

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Introduction

The LOTT Clean Water Alliance (LOTT) provides wastewater treatment and reclaimed water services for the urban areas of Lacey, Olympia, and Tumwater in Thurston County. The long-range plan for managing wastewater in the future is focused on protecting public health and the environment by encouraging flow reduction and providing effective treatment of wastewater to high water quality standards. This includes treating a portion of wastewater flows to reclaimed water quality and expanding the beneficial uses of reclaimed water in communities for purposes such as irrigation, decorative fountains and ponds, and toilet flushing. Water not used for these purposes is used for groundwater recharge through infiltration. Recently, questions and concerns have been raised about using reclaimed water for groundwater recharge. To address those questions, the LOTT Clean Water Alliance is conducting a multi-year Groundwater Recharge Scientific Study. Findings will be used to help make future decisions about reclaimed water treatment and use.

The Study is intended to provide and assess objective, verifiable, and peer-reviewed scientific data, complemented by active community involvement and dialogue about the Study and related issues.

One of the first steps toward active community involvement was to establish a Community Advisory Group. The LOTT Board of Directors intends for the Community Advisory Group to serve throughout the duration of the Study, but its members were initially asked only to commit to a first phase of work. Their role was to assist the Board and Study team in understanding community perspectives and to help develop questions that the Study should address. The Community Advisory Group was also asked to help identify effective ways to involve the public throughout the Study. See Appendix A for the Community Advisory Group Mission Statement and Principles of Participation, which outlines the role of the Community Advisory Group during its first phase of work.

Selection of Community Advisory Group members was based primarily on identifying a group of individuals representing diverse community perspectives. Specifically, the LOTT Board of Directors wanted representation for each of four broad categories: environmental, social, public health, and economic. The opportunity to serve on the advisory committee was advertised widely and interested individuals were asked to complete an application. Prior knowledge or experience with wastewater or reclaimed water was not required, although it was important for prospective members to have a general interest in the topic of reclaimed water and a willingness to learn more about it. The LOTT Board of Directors reviewed the 39 applications received and appointed 16 members to the advisory group. Community Advisory Group members included:

Maureen Canny
John Cusick
Marissa Dallaire
Lyle Fogg
Holly Gadbow
William Gill
Azeem Hoosein
Karen Janowitz

Emily Lardner
Bill Liechty
Scott Morgan
Pixie Needham
Tina Peterson
Ruth Shearer
Edward Steinweg
Richard Wallace

Community Advisory Group members were asked to participate in five meetings over the course of seven months. Meetings generally included discussions of one or more work products, as well as informational presentations by Study team members. Members had the opportunity to ask questions and provide feedback at each meeting. See Appendix B for the meeting schedule, agendas, and meeting summaries. Members also were asked to review materials and provide feedback periodically by email. Tours of LOTT's Budd Inlet Treatment Plant were offered to Community Advisory Group members interested in learning more about wastewater treatment and reclaimed water production. Six members, along with several of their family members, took advantage of the tour opportunity. Five members also volunteered to attend a meeting of the LOTT Board of Directors to provide the Board with an update following each Community Advisory Group meeting.

Work Plan and Products

As part of the work plan for the first phase of work, the Community Advisory Group was asked to complete several interim work products, including:

- 1) A list of key community questions and concerns regarding reclaimed water and groundwater recharge. This list includes the group's initial perspectives, questions, or issues, as well as those shared by the broader community.
- 2) A list of recommended question areas for a random sample telephone survey and one-on-one stakeholder interviews, as well as potential stakeholders to include in the interview process.
- 3) A summary of ideas generated by the Community Advisory Group about ways to effectively engage the broader community in the Study, to be used in the development of a public involvement plan.
- 4) Comments on a draft public involvement plan to be used in future phases of the Study.
- 5) A final report of the group's work during the first phase of the Study.

Work Product 1: Community Questions and Concerns

One of the first work tasks for the Community Advisory Group was developing a list of questions or issues that exist in the broader community about using reclaimed water to recharge groundwater. This list was developed through several stages. The first included initial telephone interviews with each advisory group member prior to their first group meeting. In those interviews, members were asked to provide their perspectives, questions, and issues about reclaimed water and groundwater infiltration. At the first meeting, members reviewed the results of those interviews and were asked to add their thoughts on other questions or issues that may come from the broader community. Additional questions and concerns were identified by members at subsequent meetings, during tours of the treatment plant, and through comments submitted by email. Public opinion research, including a telephone survey of 400 residents and separate in-depth interviews with 53 community members, also generated questions and concerns for the list. During presentations to various community groups and other interactions with the public, Study team members have gathered additional questions and issues that have been posed by members of the public, and these are also included in the list. Many of the questions and concerns were similar in nature and are not listed individually in order to minimize duplication. This list will be used by the Study team as the scope of the Study is developed to ensure that the Study examines and addresses community concerns and questions. The full list follows:

Rationale for Recharge

- Why use reclaimed water for groundwater recharge?
- What are the impacts of using reclaimed water for recharge in terms of resources?
- What are the forces that drove LOTT to use reclaimed water for groundwater recharge and go beyond use of reclaimed water for irrigation and other non-potable uses?
- Are there limits to the amount of water we can discharge to Puget Sound?
- Is there a need to replenish groundwater, such as a limit to the amount of water we can use for drinking and other purposes?
- What is the relationship between reclaimed water recharge, the cities' needs for more water rights, and growth?
- What are the economics that went into determining that this approach is cost-effective?
- What is the consequence if reclaimed water isn't used for groundwater recharge?
- How was wastewater managed before LOTT?
- Would efforts at water conservation decrease the need to discharge and/or recharge?

Costs Associated with Recharge

- Is it costly to use reclaimed water for groundwater recharge because new regulations need to be developed?
- Is it costly to transport the reclaimed water from the treatment plant to recharge basins?
- What does a recharge project cost?
- What are some of the benefits that come from this type of project?
- Who pays for recharge projects?
- Who stands to benefit from recharge projects (private companies or others)?

Safety of Recharge

- Is it safe to use reclaimed water for groundwater recharge?
- How can we be sure that our groundwater is protected?
- By recharging with reclaimed water, are we creating antibiotic-resistant pathogens?
- What are the current regulatory requirements related to reclaimed water and recharge?
- How do regulations relating to anti-degradation relate to this approach?
- How do local wellhead protection efforts relate to recharge?
- What type of monitoring and fail-safe systems are needed to ensure safety of recharge?

Treatment of Reclaimed Water

- What exactly is reclaimed water?
- What is the treatment process to ensure safety of reclaimed water?
- What happens if the water doesn't get treated properly – is that monitored for and would it be discovered and corrected before the water was recharged or reused?
- What reclaimed water treatment methods exist beyond sand filters and membranes?
- What is the treatment effectiveness of these other technologies and what are the costs for each?
- What would it cost to treat reclaimed water all the way to direct potable use?
- How does the microfiltration technology used at the Martin Way Reclaimed Water Plant work?
- Is there any difference between the quality of reclaimed water from Martin Way plant and that from the Budd Inlet plant?
- Even if reclaimed water meets drinking water standards, is it suitable for drinking?
- What contaminants are in reclaimed water – metals, nutrients, pathogens, and compounds of potential concern?

Technical Aspects of Groundwater Infiltration

- What methods of recharge exist and what are the costs for each?
- Does LOTT recharge through direct injection or infiltration?
- How are recharge sites chosen?

- Are areas downstream from recharge sites monitored and tested?
- What is the depth to groundwater and what kind of soils are in areas where recharge would take place? Is there a difference in various areas?
- Does additional treatment take place as water moves through the soils?
- Does the type of soil in a recharge area affect removal of contaminants?
- Is the soil in recharge areas negatively impacted over time?
- Does the quantity of water to be recharged present a problem? Will risks increase as the recharge volume increases in the future?
- What happens to the recharged water – where does it travel and how long does it take to get there?
- Is there a chance that recharged water would be withdrawn through a private or public drinking water well?
- If most of the recharged water flows underground to marine waters, how is that different than or preferable to discharging it directly to Budd Inlet?

Compounds of Potential Concern

- What chemicals are currently tested for in reclaimed water before it goes into purple pipe?
- How is the water tested?
- What substances are left in the reclaimed water after it is treated (compounds of potential concern)?
- What do we know and what don't we know about what is in the water?
- What are the effects of pharmaceuticals in the water?
- What do we know about effects on human health – what are thresholds of effects?
- What are the negative affects to aquatic life, wildlife, and the environment?
- Do these compounds ever go away?
- What are the cumulative impacts of these compounds?
- How much of this contamination could be avoided through source control efforts like medicine take-back programs?

Experiences from Other Places

- What are other areas of the country doing regarding recharge?
- Is there data from other communities around the country and the world (with similar projects) that can be shared?
- What are other communities around Puget Sound doing regarding reclaimed water?
- How do other communities around Puget Sound meet their discharge limits?

Background Conditions

- What is the quality of groundwater unaffected by recharge?
- Is it fair to assume groundwater is perfectly clean before recharge with reclaimed water?
- Are compounds of potential concern present in drinking water?
- How does the quality of reclaimed water compare to the quality of other waters in the county, like rivers and lakes?
- How does area geology affect movement of water?

Uses of Reclaimed Water

- Where is reclaimed water being used now?
- Can enough reclaimed water be used for irrigation that recharge would not be necessary?
- Are there potential negative impacts from irrigation use, such as irrigation water also making its way to groundwater?
- Are we really making the most of reclaimed water by recharging with reclaimed water when it can be used for toilet flushing and other uses that would save drinking water?

- If we cannot discharge the water into Puget Sound, why aren't cities requiring use of the reclaimed water for toilet flushing and other uses?
- Does new housing construction require dual plumbing systems to increase use of reclaimed water?
- What is the entry point for businesses and others who want to use reclaimed water?

Environmental Justice Issues

- What are the demographics of people who live closest to these recharge sites – age, economic status, ethnicity – who may be affected?

Need for the Scientific Study

- What was the disagreement between the entities – Thurston County, LOTT, and other stakeholders – regarding recharge?
- Was that disagreement the driver behind this Study?
- What will the Study cost? Who will benefit? Who will pay?

Other Risks to Groundwater

- Is there leakage in LOTT's collection and distribution systems and isn't that a more potent risk to groundwater than contamination from reclaimed water?
- Do septic systems pose a risk to groundwater?
- What is the impact of stormwater on groundwater quality?

Public Acceptance and Decision-Making

- Is there a threshold of pharmaceuticals/compounds that would ever be considered acceptable to the community?
- If we set an acceptable threshold, what do we do if we find out later we were wrong?
- Is the cost of additional treatment worth the additional removal that could be achieved?
- Is investment in higher treatment levels the most effective option in terms of environmental protection/water quality improvement?

Miscellaneous Questions

- Is there any connection between climate change, changes in amounts of precipitation, increases in flows to the wastewater system, and the amount of flow that would need to be recharged in the future? Is that included in projections of future flows?
- Will climate change be considered in the Study?
- What additional and/or future study is needed to address what is not/cannot be learned through this current effort?

Work Product 2: Public Opinion Research Preparations

One of the tasks of the Community Advisory Group was to assist in preparations for public opinion research. The goals of the research included understanding public awareness, knowledge, and attitudes about LOTT, drinking water, wastewater, reclaimed water, and groundwater recharge. The research would also help identify preferred sources of information and ways to effectively engage the public in the Study and related community dialogue. Research included a random telephone survey of 400 community members, and separate one-on-one interviews with 53 individuals representing a broad range of community perspectives. The Community Advisory Group was asked to suggest question areas for the public opinion research. During discussions at their second and third meetings, advisory group members recommended the research include question areas related to:

- LOTT: Purpose, effectiveness, relevance of organizational values
- Reclaimed Water: Level of support for various uses

- Environment: Importance of environmental protection
- Water Quality: Awareness of the quality of various water sources
- Wastewater Management: Awareness of long-range plan and choices made
- Cost: Willingness to pay for higher treatment levels for reclaimed water
- Testing/Monitoring: Level of confidence in the quality of reclaimed water
- Trusted Information Sources: People most trusted to provide information
- Water Sources: General awareness and source of individual supply
- Contaminants in Water: Level of awareness and concern, reason for concern
- Groundwater Recharge through Infiltration: Level of support or concern
- General Demographics: Gender, age, education level

After draft telephone and structured interview questionnaires were prepared, Community Advisory Group members had an opportunity to review both questionnaires at Meeting 3 and provide input and advice during and after that meeting. A summary of suggestions included:

- Calling Area: Reduce confusion by only calling individuals who are served by LOTT.
- Instructions: Make sure instructions to survey givers and survey takers are clear.
- Terminology: Make sure the terminology is consistent and easy to understand.
- Background Information: Provide enough information to allow for informed responses.
- Data Gathering: Make sure all the input provided by respondents is recorded.
- Length of Survey: Make sure it is not so long that people hang up.
- Demographics: Avoid personal information that may upset people, like income level.
- Representation: Balance respondents by age, gender, and ethnicity.
- Avoid Bias: Be careful about words, examples, or scales that might introduce bias.

Community Advisory Group members were also provided a draft list of individuals or groups who were being considered as possible interviewees for the structured interview process, based on their ability to represent various touchstone categories or community perspectives. Members added suggestions for general categories that should be represented in the interviews, such as residents who get their water from a private well near a recharge site, well drillers, private water companies, and others who may believe they would be affected by groundwater infiltration projects. Members also had the opportunity to provide specific names of individuals or organizations to consider for interviews. See Appendix C for the final public opinion research products, including the telephone survey questionnaire, interview questionnaire, and the list of interviewees.

Work Product 3: Ways to Engage the Public

Community Advisory Group members provided a variety of ideas for engaging the public in the Study. Suggestions were provided during discussions at each meeting and via email. Members reviewed and responded to several iterations of public involvement activities. The Community Advisory Group agreed that public involvement activities related to scoping the Study might be different than those conducted during the time the Study work is proceeding. By the fourth meeting, the group had developed a list of involvement activities for the “Study Scoping Phase” and another for after scoping, referred to as the “Study Implementation Phase”.

Study Scoping Phase Activities

To support scoping, the Public Involvement Plan focuses on two key activities – a series of public meetings, along with an alternative, but complementary, interactive online presence. A variety of additional tools and activities will be used to promote and engage the public in these two key activities.

Public Meetings

(series of meetings at two key points in the scoping process)

- Point 1: Goals/Objectives/Key Questions and Draft Framework
 - Overview of questions identified to date and draft framework
 - Discussion/suggestion period
 - Open house with staffed information stations on various topics
- Point 2: Study Framework and Draft Scope
 - Overview of revised framework and draft scope of work
 - Discussion/suggestion period
 - Open house with staffed information stations on various topics
 - Break-out sessions for various audiences to provide feedback

Online Community Engagement/Social Media

(to be implemented concurrently with public meetings)

- Post informational materials, frequently asked questions, and displays from public meetings
- Post presentations/video clips of presentations
- Post draft materials for public review
- Post summaries of input received
- Provide interactive means to submit questions/comments

Other Activities/Tools

- Mail and email lists
- Informational materials – fact sheets, maps, displays, articles, presentations
- Website – a web portal dedicated to the Study
- Presentations to community groups – as requested
- Media outreach – editorial board meeting with *The Olympian*, news releases, and additional coverage in *The Olympian* and local radio stations
- Advertisements – display ads or legal notices
- Videos – webcasts, TCTV programs, or pre-recorded content
- Timelines – for scoping and for the overall Study

Study Implementation Phase

This section of the plan will outline activities to engage the public after scoping is completed, as implementation of the Study begins. This section may be refined and broken out into additional, distinct phases once the Study scope of work is defined in more detail; but for now, public involvement activities that are likely to occur after scoping are included in this section.

Educational/Informational Programs

- Programs could take the form of a series of seminars, forums, science cafes, video productions, traveling presentations, and/or website content
- Topics include:
 - Background that led to the current reclaimed water program
 - Limiting factors for discharge into Budd Inlet
 - Long range planning process – Highly Managed Plan
 - Why the Study? – Refining how to implement the Highly Managed Plan

- Water Quality 101 – regulated water quality parameters
- Water Quality 201 – unregulated water quality parameters
- Groundwater 101 – how water moves and is interconnected
 - Use graphic of the urban water cycle as a tool
- Treatment technologies – review processes/technologies
- Source control – sources of contaminants and how to prevent contamination

Additional Activities/Tools

- Public meetings or open house events, including:
 - stand-alone events and/or
 - dual function meetings with standing groups
- Meetings and Study findings that are specific to:
 - neighbors of areas studied and of potential recharge sites
 - contaminants that persist in the environment
 - source control
 - other topics as identified
- Online community engagement/social media
- Mail and email distribution of up-to-date information on the Study progress
- Informational materials – fact sheets, maps, displays, articles, presentations
- Website – a web portal dedicated to the Study
- Presentations to community groups – presentations for civic/community groups
- Media outreach – coverage in *The Olympian* and local radio stations
- Advertisements – display ads or legal notices
- Videos – posting of educational videos or pre-recorded content
- Stakeholder or small group discussions, focus groups, or roundtables
- Tours
 - Budd Inlet Treatment Plant
 - Martin Way Reclaimed Water Plant
 - Hawks Prairie Reclaimed Water Ponds and Recharge Basins
- TCTV programs or webcasts – educational or live panel, call-in programs
- Exhibits and displays – a WET Science Center exhibit and portable displays
- Table at community events – displays, informational materials, and activities
- Collaboration with neighborhood associations – distribute information to residents
- Links to public/private school systems – send meeting notices home with schoolchildren to give to their parents and find additional ways to get youth involved

Work Product 4: Public Involvement Plan

The outline of public involvement activities included above was used as the basis for the public involvement plan. It was reviewed and revised to incorporate comments from the Community Advisory Group. Revisions include two aspects important to the members:

- A mechanism for recording and responding to public comments that will be received during the scoping phase of the Study and
- An emphasis on encouraging source control and pollution prevention while the Study is underway.

The public involvement plan is not included as an appendix here but is available for review on the LOTT website and upon request.

Work Product 5: Final Report of Phase 1 Work

A summary of Phase 1 Work of the Community Advisory Group is provided in this document. It has been reviewed and revised based on comments received from the advisory group.

Continuing Role of the Community Advisory Group

It is important to the LOTT Board of Directors that the Community Advisory Group assist throughout the Scientific Study. The initial role of the group was to assist with preparations for public opinion research and development of a public involvement plan. However, as the Study proceeds, the role of the group will shift to act as a sounding-board reflecting a variety of community perspectives. The LOTT Board recognized early on that serving on the Community Advisory Group represents a significant commitment of time and effort on the part of group members. For that reason, they asked members only to commit to the initial phase of work. At the fifth meeting, members discussed the changing role of the group as the Study proceeds. They were then asked if they were willing to continue their service. A celebration was held to honor all the group members and each received a letter of appreciation for their service from the LOTT Board of Directors. The following members have agreed to continue their work into the next phase of the Study:

Maureen Canny
John Cusick
Marissa Dallaire
Lyle Fogg
Holly Gadbow
Karen Janowitz
Bill Liechty

Scott Morgan
Pixie Needham
Tina Peterson
Ruth Shearer
Edward Steinweg
Richard Wallace

The following members have chosen not to continue their service, although they wish to remain on the Study mailing list and may choose to get involved in the Study at a later phase:

Bill Gill
Azeem Hoosein
Emily Lardner



Groundwater Recharge Scientific Study Community Advisory Group

Mission Statement and Principles of Participation

November 13, 2012



Purpose and Mission Statement

The LOTT Clean Water Alliance is beginning a multi-year study, called the Groundwater Recharge Scientific Study, to help LOTT and the community understand how best to protect local water resources while treating and recharging reclaimed water. A Community Advisory Group is being formed for the study with a mission to assist the LOTT Alliance Board of Directors and study team to gain an understanding of community perspectives and questions and ensure the study is designed to address community concerns. The Community Advisory Group will also help identify effective ways to engage the public throughout the study.



Principles of Participation

Introduction

The LOTT Clean Water Alliance provides wastewater management and reclaimed water production services for the urban areas of Lacey, Olympia, and Tumwater in Thurston County. The long-range plan for managing wastewater in the future involves expanded reclaimed water production and infiltration of reclaimed water to groundwater. Recently, questions and concerns about infiltration of reclaimed water have been raised. To address those questions, the LOTT Clean Water Alliance – whose members are the cities of Lacey, Olympia, and Tumwater, and Thurston County – is beginning a multi-year scientific study. Findings will help LOTT and the community understand how best to protect local water resources while treating and recharging reclaimed water.

The first step in defining the scope of the scientific study is to clearly understand community interests, values, knowledge, and perspectives related to water quality, wastewater treatment, reclaimed water, and groundwater recharge to ensure the study addresses key community questions and concerns. The Community Advisory Group will work closely with the LOTT Board of Directors and the study team, helping identify community values and perspectives, as well as effective ways to engage the public in the study.

Role of the Community Advisory Group Members

LOTT is asking participants of the Groundwater Recharge Scientific Study Community Advisory Group to:

- Become familiar with wastewater treatment, reclaimed water production and use, LOTT's long-range Wastewater Resource Management Plan concepts, related water quality

requirements and issues, and the regulatory context for wastewater management in Washington and the local area.

- Provide informed input to LOTT staff and the study team that will be used to develop a public information and involvement plan to be implemented in subsequent phases of the scientific study. Specifically, it is requested that members:
 - Develop a list of questions or issues that may exist in the broader community about using reclaimed water to recharge groundwater.
 - Provide suggestions and advice to the study team about effective ways to address these questions and issues.
 - Recommend interview question areas to include in one-on-one stakeholder interviews and a public opinion telephone survey.
 - Suggest stakeholders to be interviewed.
- Recommend ways to effectively engage the public both in the development of the scope for the scientific study and on a continuing basis throughout the study.

Representation

Participants are being sought based upon several qualities:

- General interest in the topic
- Willingness to work cooperatively with other group members
- Willingness to learn (or learn more) about wastewater treatment, reclaimed water, groundwater infiltration, compounds of potential concern, and the study
- Willingness to objectively share information about the study with their organization, constituency, and other interested parties
- Willingness to encourage others to participate in associated public outreach and involvement activities
- Experience (professional and/or civic), knowledge, and education
- Experience serving on boards, committees, and other collaborative group environments
- Geographic and demographic representation
- Commitment to attend the group meetings

The goal is to develop a group with balanced representation of broad community interests.

Discussion Process

Community Advisory Group members agree to abide by the following discussion process:

- Value all perspectives.
- Listen openly and actively to perspectives of others.
- Treat other group members with respect.
- Participate and encourage participation of other group members.
- Empower the facilitator to moderate discussions.
- Limit discussion to one person speaking at a time.
- Make every effort to present perspectives succinctly and avoid repetition.

- Use collaborative problem solving as the preferred deliberation process.
- Avoid lengthy discussions on items in which a majority consensus cannot be made or where differing positions impede the process of the group as a whole.
- Record alternative perspectives when the group does not reach consensus.

Meeting Schedules and Attendance

In order for the process to work effectively, full participation of members will be essential. Community Advisory Group members are asked to commit to attend meetings consistently, arrive on time, and remain for the scheduled duration of the meeting. If a group member is unable to attend a meeting, he or she may send an alternate to monitor that meeting. The alternate should be briefed by the group member regarding the status of prior discussions and decisions, and should be able and willing to represent that member and the perspectives the member represents. Active participation by the alternate is encouraged as long as the alternate does not impede the progress of the group.

Members are initially being asked to commit to completion of work associated with the first phase which is expected to last about four months. Phase I focuses on design of the study, which will include extensive public involvement. To allow maximum participation, evening meetings are anticipated. It is expected that the group will need a minimum of three, and possibly four or five meetings, each three hours in duration, to complete the work required. Monthly meetings are most likely, with no more than two meetings in any month. In addition to the Community Advisory Group meetings, members of the group may be asked to volunteer to attend an occasional meeting of the LOTT Board of Directors as a representative of the group to provide updates on the group's activities.

Following Phase 1, group members will be invited to continue their work into remaining phases of the study. For future phases, meetings are likely to be no more than monthly and, during the field data collection phase, may occur only once every few months.

Support

A neutral third-party professional from Katz & Associates, Inc. will facilitate all meetings. The role of the facilitator is to ensure all perspectives are heard through a collaborative discussion process. Study team members will provide technical and logistical support, including making presentations, answering questions, researching questions raised by members, coordinating meeting logistics, and documenting meeting content. Meeting discussions may be audio taped to aid in the preparation of meeting summaries.

Meeting Agendas

Members will actively participate in agenda planning and identifying matters to be discussed. LOTT staff and the facilitator will prepare meeting agendas that reflect input from group

members. At the conclusion of each meeting, staff and group members will recommend items for inclusion in the next agenda and identify any action items requiring additional research. Agendas will be distributed by e-mail in advance of each meeting.

Timeline

Initial public involvement and public opinion activities will lead the first few months of study work starting in December 2012. Development of the scope of work for the scientific study will begin Spring 2013. In order to accommodate this schedule, it will be important for the group to use time efficiently and address items presented at each meeting as fully as possible.

Observers

Observers are welcome at Community Advisory Group meetings. However, meetings are intended for the benefit of the group members to promote balanced, constructive interaction. Observers will be asked to refrain from commenting during the proceedings. There will be an opportunity for public comment at the end of each meeting.

Work Products

The Community Advisory Group will be asked to provide several work products associated with Phase 1 of the study that will be used in development of the public input and involvement plan for the study. Meeting summaries will be prepared after each meeting, and will include interim work products. A final written report of the group's work will be prepared at the end of Phase 1.

Anticipated interim work products include:

- A summary of the group's initial perspectives, questions, or issues regarding reclaimed water and groundwater recharge. This summary will include an overview of the group's initial discussion on the topic, which may reflect opinions held by the broader community. (Meeting 1)
- A list of recommended question areas for one-on-one stakeholder interviews and the public opinion survey, as well as potential stakeholders to include in the interview process (Meeting 2).
- A summary of ideas generated by the group about ways to effectively engage the broader community in the study, which will inform the development of the public input and involvement plan, and ways the study might address key community questions and issues, which can begin to inform the scope of the study itself (Meeting 3).
- A final report of the group's work during Phase 1 of the study. The facilitator will compile a draft summary of the group's work for the members to review and revise. This draft summary will document the scope and content of the group's discussions, a summary of their previous work products, and any individual opinions and observations that are not otherwise reflected in the report (Meeting 4).

- The group may also be asked to review and comment on the draft public involvement plan that is prepared by the study team in preparation for future phases of the study (Meeting 4 or 5).

Relationship to the Board

The Community Advisory Committee will work closely with the LOTT Board of Directors and the study team throughout their tenure. Members of the Community Advisory Group will rotate duties to attend LOTT Board meetings or work sessions to provide updates to the Board regarding their work. They may also be asked to present some of their work products and/or their final report to the Board. Board members may occasionally attend meetings of the Community Advisory Group to observe or gather feedback.

Phase 1 Meeting Schedule

Community Advisory Group – Groundwater Recharge Scientific Study

Meeting 1 Tuesday, December 11

- Introductions
- Overview presentation
- Discussion on reclaimed water perspectives and questions

Meeting 2 Monday, January 7

- Discussion of question areas for public opinion research
- Suggestions for community members to consider interviewing
- Topic presentations for continued learning

Meeting 3 Wednesday, February 6

- Discussion of how to effectively engage the broader community in the study
- Feedback on possible activities for the public involvement plan
- Topic presentations for continued learning

Meeting 4 Tuesday, April 9

- Presentation of results from public opinion phone survey
- Discussion regarding ideas for public involvement plan
- Topic presentations for continued learning

Meeting 5 Wednesday, June 5

- Review of draft Public Involvement Plan
- Review of draft Report on Phase 1 Work
- Discussion of Community Advisory Group's role in next steps of the study

LOTT Community Advisory Group

Meeting Agenda

December 11, 2012

LOTT Board Room, 500 Adams Street NE, Olympia

- 5:30 pm **Informal Meet and Greet** (Light Dinner Provided)
- 6:00 pm **Welcome**
Cynthia Pratt, LOTT Board of Directors President
- 6:05 pm **Introduction to Groundwater Study**
Mike Strub, P.E., LOTT Executive Director
- 6:15 pm **Introductions**
Lisa Dennis-Perez, LOTT Public Communications Manager
- 6:40 pm **Overview Presentation: Reclaimed Water Program**
Karla Fowler, LOTT Director of Community Relations
Questions/Discussion
- 7:15 pm **Mission and Principles of Participation Review**
Patsy Tennyson, Facilitator & Consultant, Katz & Associates
Questions/Discussion
- 7:35 pm **Break**
- 7:50 pm **Discussion: Perspectives and Questions regarding Reclaimed Water and Recharge**
Patsy Tennyson, Facilitator
- 8:30 pm **Next Steps**
Patsy Tennyson, Facilitator
- 8:50 pm **Public Comment**
Patsy Tennyson, Facilitator
- 9:00 pm **Adjourn**
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Community Advisory Group – Groundwater Recharge Scientific Study

Meeting 2, Agenda

January 7, 2013

LOTT Board Room, 500 Adams Street NE, Olympia

- 5:30 pm **Informal Meet and Greet** (Light Dinner Provided)
- 6:00 pm **Advisory Group Business/Logistics**
Patsy Tennyson, Facilitator & Consultant, Katz & Associates
- 6:15 pm **Presentation 1: Why Reclaimed Water?**
Karla Fowler, LOTT Director of Community Relations
Questions/Discussion
- 6:45 pm **Discussion: Public Opinion Polling Thoughts and Ideas**
Patsy Tennyson, Facilitator
- 7:30 pm **Break**
- 7:45 pm **Presentation 2: Water Quality 101**
Jeff Hansen, Lead Consultant, HDR Engineering, Inc.
- 8:15 pm **Discussion: Revisit Thoughts and Ideas**
Patsy Tennyson, Facilitator
- 8:45 pm **Next Steps**
Patsy Tennyson, Facilitator
- 8:50 pm **Public Comment**
Patsy Tennyson, Facilitator
- 9:00 pm **Adjourn**
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Community Advisory Group – Groundwater Recharge Scientific Study

Meeting 3, Agenda

February 6, 2013

LOTT Board Room, 500 Adams Street NE, Olympia

- 5:30 pm **Informal Meet and Greet** (Light Dinner Provided)
- 6:00 pm **Advisory Group Business/Logistics**
Patsy Tennyson, Facilitator & Consultant, Katz & Associates
- 6:15 pm **Presentation 1: Why the Groundwater Study?**
Mike Strub, P.E., LOTT Executive Director
Lisa Dennis-Perez, LOTT Public Communications Manager
- 6:40 pm **Discussion: Public Opinion Research Planning**
Patsy Tennyson, Facilitator
- 7:20 pm **Break**
- 7:30 pm **Discussion: Ideas on Public Involvement Plan**
Patsy Tennyson, Facilitator
- 7:45 pm **Presentation 2: Water Quality 201**
Jeff Hansen, Lead Consultant, HDR Engineering, Inc.
- 8:30 pm **Discussion: Terminology for CPCs**
Patsy Tennyson, Facilitator
Karla Fowler, LOTT Director of Community Relations
- 8:50 pm **Next Steps**
Patsy Tennyson, Facilitator
- 8:55 pm **Public Comment**
Patsy Tennyson, Facilitator
- 9:00 pm **Adjourn**
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Community Advisory Group – Groundwater Recharge Scientific Study

Meeting 4, Agenda

April 9, 2013

LOTT Board Room, 500 Adams Street NE, Olympia

- 5:30 pm **Informal Meet and Greet** (Light Dinner Provided)
- 6:00 pm **Advisory Group Business/Logistics**
Patsy Tennyson, Facilitator & Consultant, Katz & Associates
- 6:10 pm **Public Comment**
Patsy Tennyson, Facilitator
- 6:20 pm **Report on Initial Results of Public Opinion Research**
Ian Stewart, EMC Research – Telephone Survey
Patsy Tennyson, Facilitator – Structured Interviews
- 7:00 pm **Discussion: Public Involvement Plan Phases and Tools**
Lisa Dennis-Perez, LOTT Public Communications Manager
Patsy Tennyson, Facilitator
- 7:30 pm **Break**
- 7:45 pm **Discussion: Television/Video Documentation of Meetings**
Karla Fowler, LOTT Community Relations and Environmental Policy Director
Patsy Tennyson, Facilitator
- 8:00 pm **Presentation: Groundwater Recharge and Soil Aquifer Treatment 101**
Jeff Hansen, Lead Consultant, HDR Engineering, Inc.
- 8:50 pm **Next Steps**
Patsy Tennyson, Facilitator
- 9:00 pm **Adjourn**
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Community Advisory Group – Groundwater Recharge Scientific Study

Meeting 5, Agenda

June 5, 2013

LOTT Board Room, 500 Adams Street NE, Olympia

- 5:30 pm **Informal Meet and Greet** (Light Dinner Provided)
- 6:00 pm **Advisory Group Business/Logistics**
Patsy Tennyson, Facilitator & Consultant, Katz & Associates
- 6:10 pm **Public Comment**
Patsy Tennyson, Facilitator
- 6:20 pm **Report on Results of Public Opinion Research**
Patsy Tennyson, Facilitator – Structured Interviews
- 6:40 pm **Presentation: Shifting into the Scoping Phase of the Study**
Jeff Hansen, Lead Consultant, HDR Engineering, Inc.
Ben McConkey, LOTT Groundwater Recharge Scientific Study Project Manager
- 7:10 pm **Discussion: Draft Public Involvement Plan**
Patsy Tennyson, Facilitator
- 7:35 pm **Break**
- 7:45 pm **Discussion: Wrapping Up Phase 1 Work**
Patsy Tennyson, Facilitator
- 8:10 pm **Discussion: Phase 2 Role of Community Advisory Group**
Patsy Tennyson, Facilitator
- 8:40 pm **Next Steps**
Patsy Tennyson, Facilitator
- 8:45 pm **Celebration and Thank You**
- 9:00 pm **Adjourn**
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Community Advisory Group – Groundwater Recharge Scientific Study

Meeting 1 – December 11, 2012 – Summary

Welcome and Introductions

The meeting opened at 6:00 pm with Patricia Tennyson of Katz & Associates acting as the meeting facilitator. LOTT Board of Directors President Cynthia Pratt welcomed the new members of the Community Advisory Group and thanked them for their service. LOTT Executive Director Michael Strub greeted the group and explained the significance of the Groundwater Recharge Scientific Study and the advisory group's role in the study. Introductions continued with LOTT and consultant staff, members of the advisory group, and members of the audience.

Overview Presentation

Karla Fowler, LOTT Director of Community Relations and Environmental Policy, provided a general presentation about LOTT, reclaimed water uses (including recharge), and the Groundwater Recharge Scientific Study. Questions included the following, with answers provided in italics:

Emily Lardner:

1) The presentation included a statement that LOTT provides the highest level of treatment along Puget Sound. Is this because of nitrogen removal?

Yes, LOTT is currently the only plant along Puget Sound to provide advanced secondary treatment of wastewater using nitrogen removal, though other plants will likely be increasing their treatment levels to include some nutrient removal in the future.

2) What did you mean exactly by "there has to be somewhere to put the reclaimed water"?

The reclaimed water that LOTT produces is available for non-drinking uses. If it is not used for irrigation, toilet flushing or other uses, it must be discharged. Infiltrating it to groundwater can also be considered a beneficial use as it helps replenish groundwater supplies.

3) Are we really making the most of reclaimed water by recharging with reclaimed water when it can be used for toilet flushing and other uses that would save drinking water? It seems that there are better potential uses for reclaimed water, especially toilet flushing, which is a year-round use.

The infrastructure costs are significant for creating the piping network needed to distribute reclaimed water to more areas and for installing plumbing in buildings for toilet flushing with reclaimed water, so cost is a limiting factor. There are additional potential uses, such as streamflow augmentation, that hold much promise.

Bill Gill:

It seems that if you recharge, most of the water flows underground into marine waters and is "wasted". How is that different than piping the reclaimed water directly to the marine water?

Recharge can help to replenish groundwater and, in the summer, may actually help prevent saltwater intrusion into groundwater basins. During times of heavy water demand and withdrawal of groundwater, saltwater may start to seep into areas usually occupied by groundwater. Recharging with reclaimed water could hold the saltwater back and keep it from intruding into groundwater supplies.

Maureen Canny:

Where does the recharged water go? Does it get pumped out by someone's well? Is that where we want it to go eventually? Is the hope that the results of the study will support recharging with reclaimed water and withdrawing it later for drinking water use?

It is not the intent of LOTT's recharge program to send reclaimed water directly into underground drinking water supplies. In fact, LOTT's recharge areas are carefully selected to minimize potential interaction with drinking water aquifers. However, technology does exist to treat the water to full drinking water quality. Community conversations initiated as part of the study will be an opportunity for the community to consider their interest in treating the water to such a high level that it could be used directly for drinking water.

Holly Gadbow:

How much water is being treated to reclaimed water standards and how much effluent is being discharged to Budd Inlet? I thought that the reason we were looking to recharge reclaimed water was because the state would not let us discharge any more water into Budd Inlet?

That is true. LOTT is regulated by the state Department of Ecology and our permit restricts how much flow can be discharged to Budd Inlet. LOTT's long-range plan included groundwater recharge of reclaimed water for several reasons. First, given the limits of LOTT's Budd Inlet discharge permit, there had to be somewhere else for the water to go. Second, the community valued the water as a resource, and supported treating it to a high enough quality that it could be put to beneficial use for nonpotable purposes like irrigation or to replenish groundwater supplies.

Bill Liechty:

Is this the only opportunity we'll have to learn about this and ask questions? If not, I'll keep thinking about my questions and ask them at a later time.

There will be many more opportunities to ask questions.

Mission and Principles of Participation

Patricia reviewed the Mission and Principles of Participation, including the mission of the group and their purpose, as well as their work plan and products. She also reviewed general discussion guidelines related to working as a group and emphasized the importance of having all members attend each meeting. The proposed meeting schedule was reviewed and group members were asked to contact Lisa about any known conflicts that might affect their attendance. Group members were also asked to consider volunteering to attend a future Board meeting to provide the Board with a brief summary of future advisory group meetings.

Karen Janowitz:

Would Emily's alternate (who was present at the meeting) be willing to serve in place of others as well? *Her alternate responded that he would not be available to do that. It was suggested that other audience members, several of whom had applied to serve on the advisory group, may be interested in serving as alternates, and those looking for alternates could check with them after the meeting.*

Ruth Shearer:

When are the LOTT Board meetings held?

Board meetings are held on the second Wednesday of each month, beginning at either 5:30 or 6:30 pm.

Bill Liechty:

What are the dates for our future meetings?

The proposed meeting schedule includes evening meetings on January 7, February 6, April 9, and May 1. The proposed meeting schedule is included in the binder. Please let us know of any community conflicts or if you cannot make a meeting.

Karen Janowitz:

Why is there a break between the February and April meetings?

That break leaves time to complete the public opinion research before we get the group back together.

Discussion: Perspectives and Questions about Reclaimed Water and Recharge

Patricia introduced the group discussion by summarizing the perspectives she gathered from the advisory group members during phone interviews prior to the meeting. Following is a summary of information provided by group members:

- Familiarity with LOTT and with reclaimed water use in the area (or in other areas in the country) ranges from not familiar at all to very familiar
- Most often mentioned questions or concerns related to reclaimed water use:
 - why do it?
 - is it safe?
 - what is the treatment process to ensure safety of reclaimed water?
 - what substances are still left in the reclaimed water after it is treated? (such as compounds of potential concern)
- Most often mentioned questions or concerns related to groundwater recharge:
 - why not just use reclaimed water for additional irrigation?
 - isn't this costly?
(both because new regulations might need to be developed and because it is costly to transport the reclaimed water from the treatment plant to the recharge basins)
 - how can we be sure that our groundwater is protected ?
(concern about protecting groundwater was mentioned by almost all group members)
- Topics of particular interest for future meetings included:
 - information about the reclaimed water treatment process and state-of-the-art processes
 - information about substances that might get into groundwater basins if we recharge them with reclaimed water
 - learning more about how we ensure recharge is done at appropriate sites

Patricia then asked the group to share any additional thoughts, perspectives, or questions that come to mind for them, or that they felt may come from the broader community, regarding reclaimed water and groundwater recharge. The group generated the following list:

- What are the effects of pharmaceuticals in the water?
- There are two things the public needs to understand:
 - Are there limits to the amount of water we can discharge to Puget Sound?
 - Is there a limit to the amount of water we can use for drinking and other purposes?
- Is there data from other communities around the country and the world (with similar projects) that can be shared?
- Is there a threshold of pharmaceuticals/compounds that would ever be considered acceptable to the community?
- If we set an acceptable threshold, what do we do if we find out later we were wrong?

- What would a recharge project cost and what are some of the other benefits that would come from this type of project?
- What is the relationship between reclaimed water recharge, the cities' needs for more water rights, and growth?
- What are the economics that went into determining that this approach is cost-effective?
- What are the forces that drove LOTT to go beyond irrigation and other non-potable uses?
- What chemicals are currently tested for in reclaimed water before it goes into purple pipe?
- Showing a glass of clear water in a photograph doesn't tell the full story. This is a public relations ploy that implies the water is perfectly clean, when it may not be.
- What reclaimed water treatment methods exist beyond sand filters and membranes, what methods of recharge exist, and what are the costs for each?
- It seems that there is a question about how this is framed to the public as we move forward and it tends to be presented in terms of risk vs. benefit. It should also be examined from the other direction – what is the consequence if reclaimed water isn't used for groundwater recharge?
- It would be helpful to have an understanding of the current regulatory requirements related to reclaimed water and recharge.
- I would appreciate a refresher course on the current microfiltration technology used at the Martin Way Reclaimed Water Plant.
- How are recharge sites chosen?
- How is the water tested, and what is in it? What do we know and don't we know about what is in the water? Are areas downstream from recharge sites monitored and tested?
- What is the quality of groundwater before any recharge? We cannot assume it's perfectly clean.
- If we cannot dump the water into Puget Sound, why aren't cities requiring use of the reclaimed water for toilet flushing and other uses?
- What are the demographics of people who live closest to these recharge sites – age, economic status, ethnicity – who may be affected?
- I would like to know more about the tussle between the entities – Thurston County, LOTT, and other stakeholders – regarding this issue?
- Where is the reclaimed water being used now?
- Is there currently potential for negative impacts from irrigation? Could irrigation water also make its way to groundwater?
- What exactly is reclaimed water? How does it compare to the amount of pollution in other waters in the county?
- Is there any difference between the quality of reclaimed water from Martin Way plant and that from the Budd Inlet plant?
- Why are we doing this and what are the impacts in terms of resources? Can we explain this clearly enough that the public can understand?
- Information about basic groundwater geology would be helpful for the public.
- What is the depth to groundwater and what kind of soils are in areas where recharge would take place? Is there a difference in various areas?
- What happened before LOTT? How was wastewater managed?
- What is the entry point for businesses and others who want to use reclaimed water?
- Is there leakage in LOTT's collection and distribution systems? This seems like a more potent risk than contamination from reclaimed water.

- Explain the money involved in these types of projects and in the study itself – who will benefit, who will pay, and do private companies stand to benefit?
- What do we know about effects on human health – what are thresholds of effects?
- Is there any connection between climate change, changes in amounts of precipitation, and increases in flows to the wastewater system? Is that included in projections of future flows? Will that be considered in the study?
- What is the basis for the statement: “there are no known human health effects from reclaimed water”? This needs more explanation.
- Can we conserve more water in order to decrease the need to discharge?
- What are other communities around Puget Sound doing (regarding reclaimed water and how to meet their discharge limits)?
- What are other areas of the country doing regarding recharge?
- How do regulations relating to anti-degradation relate to this approach?
- Does new housing construction require dual plumbing systems to increase use of reclaimed water?

Next Steps

Patricia explained that the focus of the next meeting will be preparations for public opinion research. To help with development of the study’s public involvement plan, it will be helpful to have a clear understanding of our communities’ level of awareness and attitudes regarding these issues, as well as preferences about how residents would like to be engaged in these issues and the study. Research will include structured interviews with 50 community members and a random-sample telephone survey of residents. She asked the advisory group members to do some thinking about this in preparation for the next meeting and to come to the meeting with ideas about potential question areas that should be included in the survey and interviews, as well as suggestions for community members to participate in the structured interviews.

Bill Gill:

Will you have an outfit help you put the survey together? Will we be expected to formulate the actual survey questions?

The study team will contract with a public opinion research firm to create the survey questions so they are objective and help us meet our information goals. The advisory group will help to determine the general question areas for the survey, but does not have to develop the actual questions.

Emily Lardner:

How will you include/accommodate people who don't speak English in the surveying?

We will work with the research firm to plan for that type of situation. Those firms are generally prepared to accommodate non-English speaking residents.

Patricia then shared with the group that LOTT staff are happy to provide a tour of the Budd Inlet Treatment Plant and the Reclaimed Water Plant. The tours are optional, and they provide an excellent opportunity for advisory group members to learn more about the technical aspects of wastewater treatment and reclaimed water. Several dates and times have been arranged. She passed around a sign-up sheet for the tours.

Patricia stated that it is clear the group is interested in developing a better understanding of issues relating to reclaimed water and recharge. Time will be set aside at each meeting so that the group can

learn about these issues in more detail. She then asked if the group had any specific requests regarding topics to cover in future presentations or reference material:

Bill Gill:

I think it would be helpful to learn about current wellhead protection efforts of local cities and the county. I believe they have maps and such that would be informative. I am interested in how wellhead protection efforts relate to plans for recharge.

Scott Morgan:

What compounds are in the incoming wastewater and what compounds are going out with the treated water?

Maureen Canny:

It would be helpful to have a diagram that illustrates the water cycle for reference.

Public Comment

The audience was invited to make comments. One audience member chose to do so:

Janine Unsoeld:

I am concerned about public transparency and would encourage members of this group to ask the LOTT Board to televise these meetings, as that would encourage more public involvement in the process and this important issue. Also, I am an editor for Green Pages and a blog and hope to cover your work in future issues.

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Community Advisory Group – Groundwater Recharge Scientific Study

Meeting 2 – January 7, 2013 – Summary

Welcome and Initial Business

The meeting opened at 6:00 pm with Patricia Tennyson of Katz & Associates acting as the meeting facilitator. Introductions of advisory committee and study team staff members were made. The advisory group had no comments on the Summary Notes for Meeting 1, so they were acceptable as provided.

Presentation 1: Why Reclaimed Water?

Karla Fowler, LOTT Director of Community Relations and Environmental Policy, provided a general presentation about the planning process that led to LOTT's long-range Wastewater Resource Management Plan, which resulted in the reclaimed water program. The presentation summarized the other alternatives that were considered; reasons why reclaimed water, conservation, and increased wintertime discharge to Budd Inlet were the favored alternatives; and steps that have been taken to implement the plan. The plan is also known as the Highly Managed Plan, because the strategy involved in building new capacity in small increments, "just-in-time" as they are needed, requires constant planning. Questions included the following, with answers provided in italics:

Karen Janowitz:

Can you give some examples of I&I (inflow & infiltration) projects that were completed by City of Olympia?

The City of Olympia invested approximately \$8 million to complete I&I removal projects. Their work focused primarily on removing I&I from the Westside of Olympia, which was principally due to groundwater infiltration into the sewer system.

Tina Peterson:

1) Is there a plan to get rid of more I&I in the future?

The City of Olympia more than met their obligation to remove I&I from the system. LOTT does offer funding to the cities to assist with I&I removal projects, but these projects are fairly complicated and expensive, and for those reasons, not many have been completed.

2) Is there an effort to educate the public about pretreatment to encourage them not to put weird things down the toilet?

Yes, LOTT has a brochure titled "You Flushed What?" that is distributed to the public, and we collaborate with our partner jurisdictions on campaigns to raise awareness about source control. Other information is provided through the WET Science Center.

Lyle Fogg:

What is the annual capacity report that you mentioned? Does the capacity/flow coming from different areas change? Does the report include capacity left in the system?

The annual Capacity Report actually consists of three reports: the Flows and Loadings report, Inflow & Infiltration report, and the Capacity Assessment report. These reports are available on LOTT's website. The flows from different areas of the system can change over time, and that is why the annual analysis is important. The Capacity Assessment report uses information from the other two reports to determine

how much capacity is left in the system and when and where a new increment of capacity will be needed in the future. Three kinds of capacity are analyzed – treatment capacity, conveyance capacity (pipelines and pump stations), and discharge/use capacity. The latter considers discharge into Budd Inlet and uses of reclaimed water (including groundwater recharge).

Holly Gadbow:

1) Has the served population kept pace with the projections used in the long-range planning process? *The actual population growth has been slower than originally projected due to the economic slowdown the last few years. The original projections for 2020 would have resulted in a sewer population of 195,000; current projections for 2020 total 148,000.*

2) Given the current capacity, how long until we need to build something new?

LOTT's current Capital Improvements Plan envisions adding the next increment of reclaimed water at the Budd Inlet Reclaimed Water Plant, with construction beginning in 2017 and operation starting in 2019. Beyond that, the plan lists expansion of the Martin Way Reclaimed Water Plant beginning in 2020 and construction of the Tumwater Reclaimed Water Plant starting that same year, to go on-line in 2024. The Mullen Road Reclaimed Water Plant is not anticipated for construction until 2038. All these dates are subject to change, as the Capital Improvements Plan is adjusted every year based on the annual Capacity Report, changing conditions, and other factors.

Bill Gill:

Has there been any effort to limit growth or charge more for growth to discourage it?

Controlling growth is not within LOTT's authority. Any efforts to limit or discourage growth would need to be set in place by the jurisdictions as part of their Comprehensive Plans. LOTT's responsibility is to provide management and treatment for wastewater flows generated by our local communities. We use the growth projections provided to us by the jurisdictions, based on their land use policies and actual development projects.

Bill Liechty:

Will we have a chance to learn about the relationship between reclaimed water and new water rights?

Yes, we can provide the advisory group with an introduction to that relationship, but that isn't on the agenda for tonight's meeting.

Dick Wallace:

It doesn't seem that there is a milestone in the highly managed plan where this current work comes into play. It would be helpful for us to better understand how the Groundwater Recharge Scientific Study will be used. What policy decisions will be made as a result of the study? Are those decisions related to compounds of potential concern?

Yes, the policy decisions that will be informed by the study are related to compounds of potential concern. The highly managed plan set out a path for how to deal with our communities' increasing demand for wastewater treatment capacity into the future. Endocrine disrupting compounds were addressed during the planning process, but more research and attention has been focused on compounds of potential concern since then, with advancements in laboratory methods that can detect compounds at smaller and smaller levels. The Groundwater Recharge Scientific Study will address that specific issue – applying science that has been developed and implemented across the country and the world to our local conditions, so that we can better understand which compounds are present in wastewater and reclaimed water and what will happen to them during treatment and groundwater

recharge. That science, along with community dialogue about the study findings, will help inform decisions about the methods and levels of treatment that are appropriate for various uses and dispositions of reclaimed water.

Discussion: Public Opinion Polling Thoughts and Ideas

Patricia Tennyson provided a brief overview of planned public opinion research, including the purpose and structure of both the telephone survey and individual interviews. She explained that questions for both activities would provide valuable information about the public's level of awareness and knowledge, values and attitudes, and preferences for getting information and engaging in the Groundwater Recharge Scientific Study. The group then discussed question areas that might be included in the telephone surveys and/or interview questionnaire.

Suggestions for potential questions and question areas included:

- What does the public already know?
- Do people understand the inputs that LOTT handles?
- Are people aware of how much stormwater comes through the LOTT system?
- Do they understand what an aquifer is and how groundwater moves?
- Do people know where their drinking water comes from?
- Are there other community education efforts out there that help the public understand these issues?
- In terms of CPCs, what is the primary concern – groundwater protection, effects on fish, public health?
- Are people concerned about the cost of higher levels of treatment?
- Have they considered the cost of adding new treatment relative to the treatment improvement we would get?
- Does the source of a person's water supply affect their perspective? (People on community wells may have very different perspectives and concerns.)
- Do people know where contaminants come from – their backyard, etc?
- Do people understand there are problems of water quality and of quantity?
- Are people working to conserve water and if so, what are they doing? Have they participated in any LOTT conservation programs?
- Are people aware of the limitations of the status quo (in terms of wastewater management)?
- Do people know the reasons behind where we are now and where we may be heading?
- Do they know about the costs associated?
- Do they know how groundwater recharge is regulated and who is responsible for making sure groundwater is protected?
- Do people know the effect they have on the environment in terms of what they put into the wastewater system or otherwise dispose of?
- Do people know how to find out more information?
- Where do they prefer to get information?

Other thoughts about the public opinion research included:

- Provide some open ended questions – “what do you know about...” to get a general sense of what community knows.
- Open-ended questions may not yield the data you are after – depends on your research goals.
- Can you adjust the survey to add additional questions for individuals who are knowledgeable?
- What is the purpose of the survey – is it to get a general sense of what the public knows and how they feel about it?
- Are these public opinion research methods the best choices – why were these two methods chosen?

Thoughts about the public involvement plan included:

- There is ground that we aren’t going to be going back over – we need to help people understand some options are off the table (surface water discharge, etc.).
- We need to start at the basics – if we define what people know about the very basics, then we will know what to target with public outreach and education.
- Education is important – are there currently places for the public to go for more information?
- Has there been any paid outreach to get the word out and help people understand the issues?
- A graphic of the urban water cycle could be a valuable educational tool – LOTT might add animation and include information about what goes back into the system.
- Consider general informational meetings where people can ask questions – this will provide a sense of their general understanding.

Other thoughts/questions that came out of the discussion included:

- In terms of CPCs, what can we measure and do we measure them?
- I object to the terminology (CPCs) – these compounds are not just potential concern – we know they are of concern.
- Is there an effort to get commercial uses/industries to share the responsibilities for contamination?
- Tools may not be out there about what to do with/about contaminants to the wastewater system.
- If we can irrigate with reclaimed water now, why do we need to do this study?
- Information about current state water quality standards would be helpful – please send a link to advisory group members.

Each advisory group member was provided with a handout on which to list suggested groups or individuals to include as potential interviewees for the structured interviews. Suggestions were to be provided to Lisa Dennis-Perez by Friday, January 11. Patricia explained that their submissions would be compiled into a list of potential interviewees and reviewed at the next meeting.

Presentation 2: Water Quality 101

Jeff Hansen, lead consultant with HDR Engineering, Inc., gave an introductory presentation on water quality, beginning with an overview of the natural and human-influenced water cycles. Jeff explained four key regulated water quality parameters involved in wastewater treatment and compared water quality data for wastewater influent, final effluent, reclaimed water, septic effluent, the Deschutes River, Woodland Creek, and Budd Inlet. Questions included the following, with answers provided in italics:

Bill Gill:

Why does it look like the septic is so less effective at treatment?

The septic effluent is sampled directly out of the tank, before it has infiltrated through the soil of the drain field. Much of the treatment occurs after the sampling point, in the soil, as contaminants in the effluent are broken down by microbes and/or adhere to soil particles.

Tina Peterson:

Does the septic sampling take into account treatment that occurs in the soil column?

No, sampling occurs before the effluent enters the soil column. See above.

Karen Janowitz:

Does the nitrogen data account for events where water is only partially treated or for combined sewer overflows (CSOs)?

If there had been a CSO during the year, the sampling results would have included data from that event, however, the last CSO occurred in December 2007. Prior to that, LOTT had not had an overflow event for 16 years. There was a partially treated release in January 2009. Data from partially treated releases is also accounted for in the annual summary data, but there was not such an event in 2011, which was the time frame for the data that was presented.

Maureen Canny:

Is there a correlation between coliform limits and pathogenic presence?

Yes, coliform is used as an indicator of the potential for the presence of pathogens, since it is not feasible to test for every individual, potential pathogen. The more coliform that are present, the more likely that pathogenic strains of coliform bacteria, such as e. coli, are present.

Tina Peterson:

Do they use coliform to shut down lakes to swimming? What is the threshold?

Yes, coliform is one indicator that is used to determine if a lake should be closed because of potential health issues. Coliform is measured by counting the growth of colonies of bacteria in a certain volume of water – most commonly using the number of colonies per 100 milliliters (ml) of water. Thurston County closes lake beaches if there is one water sample with 1,000 colonies or more per 100 ml, or when the average of a set of samples taken on a single day is 200 colonies/100 ml or greater.

Maureen Canny:

1) You mentioned that reclaimed water is treated to drinking water standards, but is it actually suitable for drinking?

If reclaimed water is to be used for groundwater recharge, it is required to meet drinking water standards by the time it reaches the aquifer. Reclaimed water used for irrigation and other non-drinking

purposes is not held to that standard. Current state regulations do not allow for the direct use of reclaimed water for drinking water purposes.

2) Does LOTT test for metals like copper?

Yes, final effluent is tested for copper, other metals, and numerous other potential contaminants. Today's presentation focused on four key parameters for permit requirements, but LOTT tests for many other potential contaminants.

Audience Member:

How do metals get into the water?

Metals enter the system primarily from stormwater in the portion of Olympia with combined storm/sewer pipes. Brake pads and exhaust from cars contain metals that settle on roadways and are carried into the combined storm/sewer system during rain events. Metals are also naturally occurring in soils and enter the system through I&I. Copper and zinc can leach into water as it moves through household plumbing. Other metals, such as silver and mercury, can enter wastewater from medical and dental facilities and other industries. Still other metals, like aluminum, are present in personal care products such as deodorant, and enter household plumbing through shower and laundry drains.

Holly Gadbow:

Do we have a baseline to know what the quality of water is in Budd Inlet? Have goals for water quality in Budd Inlet been set by the State Department of Ecology?

The Department of Ecology has been studying Budd Inlet water quality for many years. The current Total Maximum Daily Load (TMDL) and Dissolved Oxygen studies in Budd Inlet have provided information about water quality there. Goals for water quality improvement in Budd Inlet are currently being set through the TMDL process.

Dick Wallace:

- 1) Permit limits for wastewater plants are set based on what the treatment technology can accomplish and how much input, or load, the water body can handle (using a baseline for water quality in the Inlet). The permits generally do not address CPCs.
- 2) What compounds of potential concern are monitored and which are not, and which compounds are removed through treatment or taken care of by other processes?

LOTT does not routinely test for CPCs. We have participated in two studies to date that have tested for some indicator CPCs, but the data that we have on CPCs for our treatment processes is extremely limited. The Groundwater Recharge Scientific Study will provide the opportunity to gather more data and take a more comprehensive look at these types of questions.

Bill Gill:

Are we generally talking about non-point source pollutants as a problem, since most of the point sources have been reduced as much as possible already?

Many of the point sources have been addressed, but Ecology's TMDL process will continue to look toward point sources for additional reductions in pollutant loading. Non-point sources are a large part of the water quality issue facing Puget Sound and have been the primary focus of the Puget Sound Partnership Action Agenda. With regard to CPCs, both point and non-point sources are involved.

Discussion: Revisit Thoughts and Ideas

Patricia provided time for advisory group members to add any additional comments or questions to the previous discussion about public opinion research or other topics. Questions included:

Maureen Canny:

What costs would be involved in taking reclaimed water all the way to direct potable use? Is that an option that is really on the table?

Water is being treated to drinking water quality in other areas of the country and the world. It is technically possible to treat reclaimed water to drinking water quality, so in that regard, that option could be on the table. Treating reclaimed water to this level would likely require the use of reverse osmosis technology. The most recent cost estimate for adding reverse osmosis to LOTT's current plan would be \$260 million net present value. However, a decision to move toward direct potable reuse would require a community-wide planning effort and broad public support.

Bill Liechty:

- 1) What level of treatment do you foresee at each of the four locations that reclaimed water is produced and what would the use of the water be at each location?

Under the current plan, water would be treated to Class A Reclaimed Water standards at all four locations. It would then be used for non-drinking purposes like irrigation or toilet flushing or used for groundwater recharge. However, based on the results of the study, and community dialogue, a higher level of treatment might be used. In some areas of the country, plants are producing "designer" waters – waters with treatment processes and qualities matched specifically to the end use of the water. For example, computer chip manufacturers require water that is much more pure than drinking water.

- 2) Does recharge involve infiltration or injection?

Groundwater recharge under the current plan involves infiltration through shallow surface basins, to take advantage of additional soil aquifer treatment, but water that is treated to a higher level could be recharged using alternative methods like direct injection.

- 3) Are you trying to measure the public perception of risk as part of the public opinion research?

Yes, it will be helpful to gain a sense of risk perception through the public opinion research.

Holly Gadbow:

Why is expansion of the reclaimed water plants planned and what would the additional reclaimed water be used for – infiltration?

LOTT is charged with providing wastewater treatment and management services for the urban areas of north Thurston County long into the future. In the past, LOTT met that mission through treatment and discharge of wastewater into Budd Inlet, however, changing permit and regulatory requirements have limited the amount of water that can be discharged to the Inlet. The long-range planning process in the 1990's identified the production of reclaimed water as a key element in providing enough wastewater treatment capacity for our communities now and in the future. The current plan involves using reclaimed water for a broad range of non-drinking purposes. Water not used for such purposes would be used for groundwater recharge.

Pixie Needham:

Is there a large vocal group against groundwater recharge? Could you explain where opposition to the plan began?

Concerns were raised about groundwater recharge during Thurston County's process to update the Critical Aquifer Recharge Areas section of their Critical Areas Ordinance. The Thurston County Planning Commission raised concerns that were echoed by some community members, including some citizens whose water supply comes from community wells.

Next Steps

Patricia reminded advisory group members to submit their suggestions for potential interviewees to Lisa before leaving the meeting. Members who needed more time were welcomed to send Lisa additional suggestions over the next week. The group was also reminded that the next meeting is Wednesday, February 6, 2013.

Public Comment

Members of the public in attendance were invited to make comments. Several audience members chose to do so:

Bob Jacobs:

I am a concerned citizen, very concerned about the study. Decisions made back when the highly managed plan was developed were made mostly on economic grounds. That planning effort didn't look closely enough at environmental risk. This study needs to look at that closely. Why would we knowingly pollute our groundwater - the sole source of our drinking water? Why do the public opinion survey? It's part of an outreach program for education, but not part of a scientific study. This seems like a diversion to the real issue at hand.

Krag Unsoeld:

I have a long history with LOTT, looking at feasibility of using wetlands at The Evergreen State College to clean water, which might also save LOTT some capacity. That didn't come about, and here we are again, looking at reaching capacity of our water resources. It seems that to allow continued growth, we are looking at ways of getting water back into the ground to allow that growth. We need to be cautious about what we are putting back in, but also may need to say we cannot grow as much as the state says we must, using water as the limiting factor. We don't need a survey to know that people are concerned about drinking "pee water," but we need to educate them that all water is recycled. Also, I would appreciate it if the meetings were video recorded.

Janine Unsoeld:

Thanks to the advisory group members for being here and studying the issue and going on the tours of the treatment plant. I am wondering about how public comments will be incorporated in this process, and what is being done about my request that these meetings be televised. Someone from this group should go to the Board meeting to let the Board know what you are doing and that meetings should be televised. LOTT has televised other meetings, so money isn't the issue. I'd like to see it done. Also, I'd like to see the public comment period be offered at the start of the meeting so the public doesn't have to stay the whole time. Also, I would like to see the audio tape on the website.

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Community Advisory Group – Groundwater Recharge Scientific Study

Meeting 3 – February 6, 2013 – Summary

Welcome and Initial Business

The meeting opened at 6:00 pm with Patricia Tennyson of Katz & Associates acting as the meeting facilitator. The advisory group had no comments on the Summary Notes for Meeting 2, so they were acceptable as provided. Also during initial business, Lisa Dennis-Perez, LOTT's Public Communications Manager, mentioned that there were several handouts provided to the advisory committee for their binders, including an update to the glossary, references and links of interest relating to relevant legislation and water quality standards, and a summary of questions and answers from the group's recent tours of the Budd Inlet Treatment Plant. She also explained that email notification of the advisory group meeting was sent out unusually late to individuals on the study mailing list and apologized for the oversight.

John Cusick provided a report back from the last Board meeting. He stated that it was a good experience, and that the Board is very grateful to the advisory group for acting as their eyes and ears. The Board suggested that group members try to avoid taking on the identity and loyalties of the organization, and that group members remain skeptical and questioning of the process, as that is a valuable perspective. The Board also asked that the group review the telephone and survey questionnaires to make sure there are no leading questions. The Board encouraged advisory group members to volunteer to present reports at Board meetings in the future. Lyle Fogg volunteered to attend the February 14 meeting and Pixie Needham volunteered to attend the April 10 meeting to provide updates to the Board.

Discussion: Public Comment and Televising of Meetings

Patricia Tennyson then asked the advisory group to discuss two topics that were raised during public comment at the last meeting: moving public comment to the start of the meeting and televising the advisory group meetings. Comments included the following:

John Cusick:

It is a good idea to move public comment to the start of the meeting. As for televising, we should be transparent in what we do, but televising gives people who want to further their interests a forum that they tend to take advantage of for their own purposes.

Holly Gadbow:

I agree about moving public comment up to the start of the meeting.

Pixie Needham:

I don't have a problem with televising if it leads to more public input.

Lyle Fogg:

I like televising meetings or putting them on YouTube to increase public access, as long as we control the amount of time we spend on it. But since some people are uncomfortable being televised, let them know up front that the meeting is being televised.

Karen Janowitz:

It's great to televise, but this group is about us being able to speak our minds, and if even one of us is not comfortable, we should reconsider it.

Enrique Quintero (alternate for Emily Lardner):

It is fine to televise. The public can see through those individuals who use the forum to promote their personal agenda.

Tina Peterson:

I'm not sure how I feel about televising. It wasn't my concept about what these meetings would be like; it wasn't presented to us up front that that would happen. I think it is fine to move the public comment up, but we will need to be mindful of time.

Bill Gill:

It seems that there are some people who would be uncomfortable with televising the meetings, so people would need to know that is happening up front. Also, we should consider how much it would cost to televise. If public comment is moved, people don't have the benefit of hearing the meeting content before commenting.

Marissa Dallaire:

Since Marissa is a minor, her mother has concerns about using her full name if the meetings are televised.

Ed Steinweg:

Funding should be used in the most effective way, and televising these meetings may not be the most effective way to get people engaged in the process. I haven't personally viewed TCTV more than a few minutes over the last 20 years.

Karen Janowitz:

I hear a consensus that it's okay to televise, since only one person is not comfortable.

Scott Morgan:

I don't see this group making formal decisions. I also don't see televising these three hour meetings as effectively engaging people in these issues.

Maureen Canny:

I think that televising would impede what we say. It may also be a waste of money. We are here to learn, and the materials of interest are available to the public in other ways. I don't think the public will even watch these televised meetings.

Ruth Shearer:

We should exclude parts with people that don't want to be televised. It doesn't matter if the program is boring; it may help those people who want to learn.

Enrique Quintero:

Even if it's not a lot of people, specific people who are interested will watch.

Bill Liechty:

I am fine with televising, but ultimately, it's a business decision about where to best spend the money to effectively involve the public.

Tina Peterson:

If it costs a couple thousand dollars a meeting, I'd rather spend our money elsewhere.

Maureen Canny:

An audio recording of the meeting is being made, so that should be made available to the public on the website.

Karen Janowitz:

The presentations that are made at these meetings would be very valuable to offer to the public.

Patricia Tennyson then suggested that the group hold further discussion on the issue of televising, and pick it up again during the discussion on the Public Involvement Plan. On the issue of moving the public comment to start of the meeting, the group agreed that change should be made at the next meeting.

Presentation 1: Why the Groundwater Study?

Karla Fowler, LOTT's Community Relations and Environmental Policy Director, provided a brief explanation about the purpose of the Groundwater Recharge Scientific Study and how it fits in with LOTT's long-range management plan. The intent of the study is not to reopen the management strategy that was established as part of the plan, but to determine how best to implement the plan in terms of the levels of treatment provided and the final uses or disposition of the treated water. Lisa Dennis-Perez then shared a flow chart that illustrated the general structure of the study, highlighting the two main tracks: science and public involvement, and how the two tracks intersect and inform each other.

Pixie Needham:

Is the study a reaction to the county's update to the Critical Aquifer Recharge Areas policies? Has the county put their decisions on hold? What science did they use to make their decisions?

LOTT had planned to undertake the study prior to the county's update. However, issues that were raised as part of the county's update have reinforced the need for the study and will help to inform the scope of the study.

Bill Gill:

What is the scope of our involvement as a Community Advisory Group? How many phases have yet to come? What would be asked of the advisory group members? Other people were interested in the advisory group – might they replace some of us?

The current advisory group members were asked to commit to participate in this first phase of work, which will help us to prepare a public involvement plan for the scoping phase of the study. The LOTT Board of Directors is very interested in having an advisory group in place for the duration of the study to act as a sounding board and foster effective public involvement. The Board recognizes that the current members may not wish to continue their service throughout the entire study. At Meeting 5, we will be asking members if they are interested in continuing their service. If some current members choose not to

continue, other applicants for the advisory group who were not initially selected may be asked to replace some of the out-going members.

Holly Gadbow:

Is there a timeline?

The first phase of work for the Community Advisory Group includes five meetings, with the last one scheduled for May 1. Group members will be asked to decide if they wish to continue their service into the next phase of the study. Future phases of the study haven't yet been defined, since the scope of the study has yet to be finalized. The overall study is expected to take four years to complete.

Scott Morgan:

I wasn't paying attention to planning 15 years ago, and now I hear LOTT is planning to do something potentially risky. Are we sure that we should do it? Staff members know so much that it may not seem risky to you, but to us, it sounds like the advisory group's role is to help sell this decision to the public. It is hard to reason with people who hear first that you are pumping something bad into the ground. *The intent of the public involvement effort is not to sell the public on some pre-determined outcome of the study, but to make sure that the public is engaged in the study and that their concerns and questions are answered during the study. In addition to the science, community conversations that occur during the study will determine what levels of treatment and end uses of the treated water are most appropriate.*

Lyle Fogg:

It seems odd to me that it's the third meeting and it's just now clicking for me that I am here to help interact with the public. This interests me, but it is important to take my sense of apprehension and risk with me as I talk to the public.

Holly Gadbow:

It's not that LOTT is getting ready to do something risky. Fifteen years ago, we didn't think it was risky to do reclaimed water. I don't think we have other alternatives to using reclaimed water, so we need to learn how to do it in a way that is not risky.

Karen Janowitz:

I like Holly's summary. It has been a confusing process, but that helps to clarify it. Fifteen years ago we didn't know much about the risks. What if we find that the science finds it is a big risk? Is there no other alternative? Is it too late?

As results come out of the study, the community will be engaged in dialogue about risk. There are options and alternatives regarding how the water is treated, what technologies are used, what the final quality of the water will be, and how the water is used or released to the environment. The point of the study is to gather scientific data and facilitate public dialogue so options and alternatives can be considered, and we can determine how best to protect public health and the environment while managing wastewater into the future.

Tina Peterson:

I'm interested in educating the public about mitigating all the risky stuff that people are putting down the toilet, so that we can prevent contamination in the first place.

Maureen Canny:

I looked at one of these studies that says 80% of compounds do not persist in the soil, but that means that 20% do persist. Isn't it better to put the money that we would spend on the study into treating the water to a higher standard right away? Do you expect at the end of the study to have groundbreaking new standards that everyone else will use as an example?

The study is needed to assess our local situation – which compounds persist here, at what quantities, what happens to them over time, what is the risk? This is a groundbreaking study and there is no question that people in other parts of the state and the country will be interested in the results.

Karen Janowitz:

Is there an element of the scope or the study where LOTT puts money into source control and education?

That could certainly be part of the public involvement plan during the study, and may be one recommendation that comes out of the study as well.

Holly Gadbow:

When Ecology asked LOTT to complete the plan and LOTT was moving to reclaimed water, LOTT had to pay Ecology to write regulations for reclaimed water because they did not exist for the state at that time. This may be another case where LOTT is out ahead of the curve.

Discussion: Public Opinion Research Planning

Patricia Tennyson reviewed the draft phone survey, prepared by the research firm EMC Research out of Seattle, with the advisory group members. Comments included:

- Be careful when calling folks who do not have LOTT service. I was called during the last round of surveys, and it was very confusing for me to be asked questions about LOTT when I did not get service from them.
- It is not clear what is meant where it says “accept two responses”. It reads as if "don't know" and "refuse to answer" are the only acceptable answers?
- It would be useful to add in question 19 some examples of the uses of reclaimed water.
- Skip the term recycled water, just use reclaimed water.
- Don't use the word “oppose” for reclaimed water. Change the wording to “concerns/questions/issues” rather than “oppose”. “Do you support this or have concerns about it?”
- You haven't given them all the information they need to make an informed decision.
- Will the survey givers write down all the input provided by the survey takers?
- This survey will help find out people's ideas about reclaimed water, as well as what they know about it.
- It seems long. People who don't know about reclaimed water may just hang up.
- Is “compound” the best term to use for the public?
- When describing compounds, include some examples of outdoor contaminants also, like yard care products, pesticides, etc.
- The income question turns people off – is it necessary?
- This information would be nice to have.

- Can we ask people if they would be willing to double their water bill in order to add more treatment? The science is changing so rapidly, and it might be different by the time the study is done. It would be good to know if people are willing to pay more for treatment up front.
- How big is the sample size?
- Will you look for respondents to get a certain percentage of ethnicities?
- Do not include the reference to LOTT in the Class A question so that it is less leading or biased.
- Be careful about things that might introduce bias – randomizing might help.
- Asking people about rates biases people against the whole survey and all the questions. It biases people against spending more money to treat to a higher level.
- Use a scale of 1-4, so people have to choose one side or the other, support or oppose.
- If you take the word “oppose” out, that creates a bias.
- Seems there is a lot of bias potential in the way these questions are structured.
- Question 19 is leading to a positive bias and should be reconsidered.

The group then discussed the draft interview questionnaire, with the following comments:

- Bills include charges for stormwater, water, and wastewater all together. If you ask a question about rates, include clarification about the actual LOTT monthly fee, so that the person being questioned does not think of the total billed amount.
- It would be best if the questioner could use the exact billing amounts from each city.

The advisory group then asked if they could be provided with a copy of the draft survey and the questionnaire so that they could have more time to provide comments. Staff provided hard copies of both questionnaires to the advisory group members. Advisory group members were asked to send any additional comments to Lisa by Friday, February 8.

Discussion: Ideas on Public Involvement Plan

Patricia then quickly explained the content of the handout regarding ideas for the Public Involvement Plan. Because of time constraints at the meeting, she asked group members to send any comments to Lisa by Friday, February 15.

Presentation 2: Water Quality 201

Jeff Hansen, lead consultant with HDR Engineering, Inc., gave a presentation on compounds of potential concern, most of which are unregulated. He reviewed general categories of compounds and their sources, what happens to them during treatment, and data from limited sampling at the Budd Inlet and Martin Way treatment plants. Questions included the following, with answers provided in italics:

Tina Peterson:

What is it about anti-epileptic drugs – is it their chemistry/structure that makes it so difficult to remove them?

Yes, these compounds are generally removed by biodegradation, and their structure is more difficult for microorganisms to break down, so it takes longer for them to degrade.

John Cusick:

What does “ADI cancer” and “ADI non-cancer” mean? Are these numbers specific for people with cancer?

No, it is not that one standard applies to those with cancer and the other to those without cancer. “ADI cancer” is the level that suggests a potential risk of cancer; “ADI non-cancer” is the level that suggests a risk for other, non-cancer health impacts.

Lyle Fogg:

Why is there only one data point? How much does this type of sampling cost? What will it cost to obtain a statistically relevant sampling size?

The studies referenced here were very limited in their budgets and their scopes. It is true that testing for these compounds is extremely expensive. There are hundreds of different compounds and testing involves a variety of testing methods and technologies. It will not be feasible to monitor for everything, but we can talk more about indicator compounds or surrogates, which is one way to get a broader picture about what is there, without testing for hundreds of different compounds.

As a citizen, I am concerned about results and studies that may be tainted by input from pharmaceutical companies and others involved in risk assessment and setting of ADIs.

Bill Liechty:

Jeff did a great job explaining some very complicated stuff.

Discussion: Terminology for Compounds of Potential Concern

Karla Fowler gave a brief presentation about the many terms used to refer to these unregulated compounds. There are many different phrases and terms currently in use and no agreement or consistency within the professional community about which term to use. She reviewed the reasoning behind the choice of “compounds of potential concern (CPCs)” for this study, stating that this seems to be the most objective option. The advisory group members had no further comment.

Next Steps

Patricia Tennyson reminded the group of the deadlines for providing additional comments on the draft telephone and interview questionnaires, as well as the draft list of interviewees and the public involvement handout. She explained that their comments would be incorporated into the drafts before they are presented to the LOTT Board of Directors for their review.

Pixie Needham asked if the people on the interview list will be mailed the survey? *No, these are in-person interviews. Why would people participate? We hope that people will be interested in providing their thoughts. If someone refuses, will you replace them with someone of similar interest or touchstone category? Yes, we will try to interview a group with a diversity of interests.*

Patricia then explained that a draft of activities for the draft Public Involvement Plan will be sent out before the next meeting for the group’s review. We also expect to have at least a draft of the telephone survey results, and some initial interview data to report, depending on scheduling. All the information that is gathered from the public opinion research will feed back into the Public Involvement Plan.

Public Comment

Members of the public in attendance were invited to make comments. One audience member did so:

Bob Jacobs:

I'll review some of my notes from early in the meeting and discussion later in the meeting. Use of the word "potential" should go away; these compounds are definitely "of concern". Televising is not as intimidating as it sounds, and group members won't be as self-censored as you think. People do watch. They won't look for or read your minutes. I don't understand the scoping effort – this is a simple thing: what's in the water, what does it mean? I don't see the value of localizing the science. It is very varied. You need to look at the actual sites to know what's in the groundwater. I don't understand why you are doing public opinion research now. This should be done at the end of the study to ask if people are willing to pay more. In this draft, you should keep the word "oppose", and skip questions 19 - 25, which are very biased. The survey doesn't say what is left in the water, which is misleading. The survey is too long for the phone. Interview question 17 is biased. There is a lot of bias in this whole process. The decision has been made and we are here to bless it - that is not right. These compounds need to be taken seriously.

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Community Advisory Group – Groundwater Recharge Scientific Study

Meeting 4 – April 9, 2013 – Summary

Welcome and Initial Business

The meeting opened at 6:00 pm with Patricia Tennyson of Katz & Associates acting as the meeting facilitator. The advisory group had no comments on the Summary Notes for Meeting 3, so they were acceptable as provided. One of the Community Advisory Group members requested that the group mission statement be read at the beginning of the meeting to provide context for the meeting and as a reminder about the group's primary tasks, so Patricia read it aloud. Lyle Fogg, advisory group member, provided a brief summary of his report to the LOTT Board in February. Pixie Needham confirmed that she will report to the Board at their April 10 meeting and Scott Morgan volunteered to attend the Board meeting on May 8.

Public Comment

Members of the public in attendance were invited to make comments. Two did so:

Dennis Burke:

Mr. Burke stated that he had several questions. Will there be a technical advisory group, because this is really what you really need? He also said he will be coming to these meetings and putting up a website. In addition, he said he had opposed the Hawks Prairie recharge site since the beginning because it is partially treated sewage full of harmful compounds. He believes reclaimed water contains high levels of phosphorus that is causing blooms of Cyanobacteria that cannot be killed. He owns a water system that is in the path of the recharge site and may comment from time to time because he has deep concerns about this. Once you pollute groundwater, it takes years and years to come back from that.

Holly Gadbow asked Mr. Burke if he and his customers were connected to the sewer system. He responded that they are served by septic systems.

Bob Jacobs:

Mr. Jacobs thanked the group for being responsive to the request to move the public comment to the beginning of the meeting, but stated that he should have asked that there be comment at both the start and the end of the meeting so the public can comment on materials distributed before the meeting and then again on the business of the meeting. Bob then referred to two recent articles about the possible risks to the environment from compounds of potential concern. He believes we should use the precautionary principle "to do no harm." He noted that the city of Lacey issued a call for bids to construct a recharge project on 5 acres on Pacific Avenue, and the city of Tumwater is building a storage tank so they can use reclaimed water to irrigate the golf course, which he said will only serve to spread pollutants. He stated that these projects should be halted until the study is complete and put the decision to the public as to whether they are willing to pay more to clean the water thoroughly before it is used in any way.

Report on Initial Results of Public Opinion Research

Ian Stewart with EMC Research of Seattle presented a summary of results from the random digit dial telephone survey. He explained briefly how the survey was structured and reviewed key findings.

Advisory group members asked several questions and Ian responded:

Bill Liechty:

Did respondents have any indication of what the survey topic was before answering the question about what is the most important environmental issue? *No, the introduction was very general. It did not state the survey was being conducted for LOTT or give any indication that the topic was water related.*

Karen Janowitz:

Was “water quality in Puget Sound” considered a completely separate answer from “water quality”? *Yes, “water quality in Puget Sound” was mentioned as a distinct issue, so it was treated as a different answer than the more general “water quality” answer.*

Dick Wallace:

Did the proportion of those served by sewer and those served by septic systems accurately reflect the true proportions? *Yes, the actual proportion is generally 60/40 sewer to septic in the urban areas, with most people in the outlying areas served by septic systems. The respondents generally reflected that proportion.*

Karen Janowitz:

Do the results from Question #24 show responses only from those who know what LOTT is? *No, Question #24 (What concerns or questions, if any, do you have about reclaimed water?) was asked of all respondents.*

Bill Gill:

If half the respondents don't respond to a particular question, does that shrink your sample size so small that your level of confidence goes way down? If so, it would be helpful to know the sample size on each question. *Yes, if only half are asked a particular follow-on question, then the sample size shrinks to 200 and the margin of error increases. The sample size for each question can be added to the report.*

Dick Wallace:

Is it fair to assume then that all the folks who know what reclaimed water is have concerns? *It is fair to assume that the level of concern rose as more information was introduced over the course of the survey. As the respondents awareness grew regarding compounds of potential concern, so too did their level of concern.*

Lyle Fogg:

Is Question #21 biased because the wording seems reassuring? *The description of recharge (allowing the water to slowly filter through the soil, just like rain, until it reaches and replenishes groundwater) was designed to be simplistic, factual, objective, and relatable, so that it would be easily understood. It was developed so as not to introduce bias.*

Bill Gill:

Why examine cross tabs and opinions of various subgroups? Doesn't that serve to make the issues more divisive? *Cross-tabulating the data is standard practice for analyzing survey results. It is not intended to be divisive.*

Karen Janowitz:

In environmental education, it is important to understand subgroups and target education and involvement activities to meet the needs of those groups.

Marissa Dallaire:

There may be important differences between subgroups. Groups like women might have more reason to be concerned, based on their activities, than other groups.

Bill Gill:

Could you explain the approach to analyzing Question #27? I'm interested in the difference between those who own vs. those who rent. *Again here, we are just looking for any significant differences in subgroups. The difference between those who own and those who rent was surprising, and cannot easily be explained.*

Karen Janowitz:

Are the respondents a self selected group? *Respondents do not know upfront what the survey is about so they cannot self select – respondents are representative.*

Holly Gadbow:

How do you get to a representative group by calling random numbers? *When we conduct a survey, we want to select our sample in such a way that every person has a chance of being called. One of the ways we did that was to use a method called random digit dialing where everyone within specific zip codes has a chance of being asked to participate in the survey. A more complete answer to that question is fairly complex, but the bottom line is that this is standard practice that has been used for years in the survey industry, and it works – it matches the census.*

Bill Liechty:

What did you find surprising? *In terms of uses of reclaimed water, it was surprising that more respondents were concerned about streamflow augmentation than groundwater recharge.*

Holly Gadbow:

Did the question about use for streamflow augmentation and for groundwater recharge come before the concept of compounds was introduced? *Yes.*

Bill Liechty:

Will you (the research firm) be analyzing what this all means? *It is the charge of the research firm to tabulate and summarize the data, and the charge of the client to decide what it means.*

Dennis Burke:

The description of reclaimed water is very biased. You should have said this was "treated sewage".

The description was kept very simple so that it would not introduce bias. Terms like “treated sewage” carry more bias than the description that was used. The intention of the survey design was to capture levels of concern by introducing information slowly as the survey progressed. The concept of potential contaminants was introduced toward the end of the survey, thus allowing us to capture general perceptions of concern early in the survey, and compare those with opinions formed once more information was introduced.

Patricia Tennyson then explained that not all of the structured interviews are complete since the last interview is scheduled for April 11. For that reason, a full report is not yet available, but will be ready by the next meeting. One initial theme from the interviews: nearly all of the interviewees stated that protecting groundwater is very important. Another question from the interviews that might be of particular interest to the advisory group as it looks at the public involvement plan involved ways to engage the public in the study. Interviewees provided a number of ideas for public involvement, including:

- public meetings, held with some frequency and not just when the study is complete
- schedule meetings so it's easy for people to participate
- include scientific data and findings at meetings
- reach out to young people using social media, among other outreach activities
- talk with a variety of groups including public officials, the agricultural community, local academics, scientists, science teachers and more
- partner with local community/environmental groups, as well as LOTT partners, to participate in already scheduled events, co-sponsor forums, make presentations at regular organizational meetings, etc.
- be present, be friendly, be informative, have activities for kids at public events

The final structured interview questionnaire and list of interviewees will be sent to the group after the last interview has been completed.

Discussion: Public Involvement Plan Phases and Tools

Lisa Dennis-Perez reviewed several graphics that described phases of the study, the proposed structure of the Public Involvement Plan, and the three main steps for the scoping phase of the study. The group then offered comments on the draft involvement plan:

Bill Liechty:

Be sure to include a mechanism to illustrate/explain why some questions, ideas, or suggestions fall off the table or cannot be included for one reason or another. It is important to show that people's ideas have been considered, even if they cannot all be incorporated.

Karen Janowitz:

Also, many people, though not technically scientists, fall into a pseudo-science category in terms of their expertise, and they can provide valuable feedback on technical aspects of the study.

Holly Gadbaw:

Will there be an Environmental Impact Statement (EIS) completed for the study? I ask because scoping is generally a standard activity when completing an EIS and it might provide a useful model. In an EIS,

public comments are listed, along with a response to each comment. We should consider using a similar methodology so that people who offer comments and suggestions can easily see that their ideas were considered.

Tina Peterson:

One graphic shows the Community Advisory Group in the first two steps of scoping, but not in the third step. It would be weird to have the advisory group active now and then not later in the process.

Bill Gill:

When it's a study like this, you're not impacting the environment much, so an EIS might not be important or relevant.

Karla Fowler:

Because this is a study and not a plan, we were not anticipating doing an EIS. However, for any sites or projects that are planned or undertaken in the future, we would certainly do an EIS.

Holly Gadbow:

That's fine, but the EIS process can serve as an example of how to incorporate and include comments. I would also like to see the advisory group added back in to Step 3 of scoping to look at the details.

Dick Wallace:

How will the study be used? Is the intent to use results to revise the management plan or to adjust how the management plan is implemented? Make sure that you are able to explain to the public why the study is being done and once it is done – so what? Explain the role of the study in terms of what will follow – what comes next.

The discussion ended with an invitation to group members to send any further comments or thoughts about what should be added or revised in the public involvement draft plan to Lisa by Wednesday, April 17. The study team will incorporate comments and send out a revised draft Public Involvement Plan for review by the group at least one week prior to the next meeting. A summary of the structured interviews will also be sent to the group so they will have that information to assist with their review of the revised draft Public Involvement Plan.

Discussion: Television/Video Documentation of Meetings

Karla Fowler shared with the group some information regarding televising future meetings. She noted that we have been putting the cart before the horse in several respects. First, the LOTT Board of Directors has been considering televising Board meetings and has instructed staff to research options and associated costs. The Board will be making a decision about potential additions or improvements to LOTT's audio-visual system by the end of the year, which will impact decisions related to televising the advisory group meetings. Second, it is important to consider the most effective ways to use video or television as part of a comprehensive public involvement plan, rather than as a separate issue. Third, LOTT, as a partnership of four jurisdictions, often needs to evaluate consistency with the practices of its partners when considering a new course of action. Since the last meeting, staff researched the practices of citizen advisory committees of our four partner jurisdictions. As shown in the table that was displayed, most of these groups provide a record of their meetings by posting agendas and minutes on

their websites. Two planning commissions post audio recordings. None of the groups post video of their meetings or televise meetings live.

Marissa Dallaire:

Video is one tool, but I don't know many people who would be willing to sit down and watch 3 hours of this meeting.

Karla Fowler:

That is why it should be considered as part of a comprehensive Public Involvement Plan, to make sure we make the most effective use of all outreach/involvement tools.

Dick Wallace

Another option that can be considered is "Go To Meetings", but it does require microphones for each advisory group member. It allows people to "attend" the meetings on their computers, see the presentations and hear the discussion, and it's recorded at the same time. We used it for another group and had great participation that way.

Presentation: Groundwater Recharge and Soil Aquifer Treatment 101

Jeff Hansen provided a presentation on groundwater recharge and the treatment that occurs as water moves through the ground. The advisory group asked questions, including:

Tina Peterson:

How is a basin a "recharge basin" if there's no water standing water in the basin? *A basin can be a recharge basin whether or not there is standing water. Some recharge basins involve standing water and others drain quickly and rarely hold water.*

What is a monitoring well compared to a supply well? *A monitoring well is one that is drilled specifically to monitor - not to withdraw any quantity of water.*

Dennis Burke:

Please explain if it is correct that the Hawks Prairie site sits on geology that is gravel so that the water moves directly from the basins to the aquifer, while septic systems in the area sit on an intervening hard pan layer so that effluent moves off and doesn't go into the aquifer. *It is correct that the Hawks Prairie site was selected because the underlying soils have the capacity to infiltrate a large quantity of water without clay or hard pan that might cause the water to pool up or flood the area. That does not mean infiltrated water is moving directly into the aquifer; nor does that mean that the water flows through the soils so quickly that there isn't additional treatment. The sand and gravels underlying the recharge basins are unsaturated (i.e., vadose zone), meaning the groundwater aquifer is not directly underneath the basins. Furthermore, it is important to keep in mind that treatment occurs as the water flows through the ground, regardless of the soil type – gravels, sand, clay. Also, effluent from septic tanks is subject to similar processes and pathways – it is being treated as it moves through the ground and it also eventually interacts with aquifers.*

Karen Janowitz:

Would Woodland Creek receive water from the new recharge site at the Woodland Creek Community Park? *The short answer is no – the facility is being designed and sized such that the recharged water will not enter the creek adjacent to the site. Modeling shows that the majority of the water will move below*

the creek to the northeast, while a portion is projected to enter the creek approximately 1.5 miles downstream (i.e., north) after a subsurface (i.e., in groundwater) travel time of three years.

Bill Liechty:

Just to clarify - regulated contaminants do not address these compounds. That is correct, these compounds of potential concern are not currently included in the lists of contaminants/parameters that are regulated.

John Cusick:

How do you actually measure travel times? In the field, the physical way to determine travel times is through tracer studies. Tracer elements, which are inert (or conservative, meaning they don't degrade) are introduced into the aquifer and then monitoring is conducted at various sites to determine when and where the tracer is detected. That data then paints a picture of how the water moves underground.

Maureen Canny:

Are we impacting the DNA of microbial organisms by introducing these compounds? It's not that their DNA is impacted, but the populations of these organisms can be affected. Those that can use these compounds may out-compete those that can't, so that the proportions of different organisms in the microbial community may change.

Ruth Shearer:

Why put sand in the recharge basins if you want sorption to occur? The design tries to find that sweet spot in allowing for efficient movement of water into the ground while also maintaining effective soil aquifer treatment in the subsurface. Treatment is a combination of sorption and biodegradation, and the exact makeup of the soil is not as important to treatment effectiveness as is residence time of the water in the soil.

But sand doesn't contain microbial organisms. Yes, research shows that it does. In fact, studies have shown that the majority of the removal of compounds of potential concern occurs within the sand layer and upper-most portion of the underlying soil, due both to sorption and biodegradation.

John Cusick:

How do these studies know that compounds actually degrade rather than just move off site? That is taken into account in the studies. Monitoring occurs at various locations relative to the point of recharge (both vertically and horizontally). Thus, the movement of those compounds that are more resistant to degradation is tracked both throughout the local site and then down-gradient (i.e., off site).

Dennis Burke:

My concern is that even if these things are broken down, there are still pieces of these compounds that exist, and it creates a toxic soup that is dangerous.

Maureen Canny:

*Gravel is a big particle with little surface area and water moves through it quickly, so isn't that two negatives? No, not necessarily. Remember, the most important factor is the amount of **total** soil surface area a drop of water encounters over time. Gravels have relatively small surface areas due to their large particle size and relatively large spaces between particles. By contrast, silts or clays have very high surface areas due to their small particle size. However, water general travels faster through gravels,*

*thereby covering more distance and encountering more material. Water travels slowly through silts and clays and thus covers less distance and encounters less material. As a result, the **total** surface area encountered under both conditions is fairly similar. Because surface area supports biodegradation (since that's where the microorganisms like to reside), removals of compounds of potential concern are also similar under these varying conditions. Soil type becomes more of an issue when there is a potential receptor, like a water supply well or a stream, within a short distance down-gradient from a recharge site. So, again the important thing is understanding how long it takes for compounds to degrade, and then comparing that with how far recharged water is projected to travel during such times, and what the water might encounter (such as wells, streams, etc). Given that level of understanding, then an informed assessment of risk can be made.*

Karen Janowitz:

Jeff is explaining what the experts look at and consider when designing a site, and it can help us determine what we want to know in order to have the water be clean enough.

Bill Liechty:

This is very important to gather this type of information to share with the public and important information for the study.

Karen Janowitz:

This type of presentation won't work for a lot of adults, but there are a lot of approaches that will work better for the public. Local environmental educators can help in developing effective presentations.

Scott Morgan:

Does the height of the water table matter because it is better to have a deeper vadose zone that contains oxygen? *It doesn't necessarily matter - treatment will occur in saturated zones too, it may just take longer.*

Tina Peterson:

Does it mean that the soil is trashed at some depth below the infiltration site? *I cannot answer that without the site specific information. We do know that there are sites where infiltration has been going on for decades and those sites continue to function properly. It is likely that most of the compounds that are sorbed to the soil undergo biodegradation over time, freeing up the soil to sorb again.*

Would coyotes or raccoons or other critters that walk over or through the recharge basins pick up bad stuff and carry it off site to other locations, like my home across the street? *I don't have information tonight to be able to answer that, but it's a good question.*

Marissa Dallaire:

On the diagram in Slide 6, can some of the reclaimed water get into a drinking water well? *Yes, it could, but that is why we study things like flow paths and travel times, to prevent that from happening. Also, treatment will have occurred by the time it reaches the well; thus, it's not the same drop of water that was initially recharged into the basin.*

John Cusick:

Have the jurisdictions considered putting development of other projects on hold until the study is done?

(Karla Fowler and Ben McConkey addressed this series of questions). *LOTT has made the decision that it will not be building new recharge facilities on properties it has purchased or will be purchasing until the study is complete. The cities' Woodland Creek project has been in the works for many years and is needed to meet their contracted obligations for new water rights. The Departments of Ecology and Health have been involved through the planning and design to assure the project meets all water quality requirements.*

What about for the storage project in Tumwater? *That project is not for recharge - it's for irrigation. The use of reclaimed water for irrigation is approved and encouraged by the state and is common practice in many states, including Washington. Irrigation uses are regulated so that the rate of irrigation does not exceed the ability of irrigated grasses and plants to take up the water or for the water to evaporate. The intent is that the water does not runoff or infiltrate in any appreciable amount, but instead, it is "used up".*

Is there any consideration for treating the water to a higher standard until the study is complete? *Increasing the treatment level is not something LOTT can just readily do. It would require adding new facilities and equipment, which take years to plan, design, and build.*

Bill Liechty:

I'm interested in the relationship between water rights and reclaimed water. I suspect that is a driver for infiltrating the water. I think the public would like to understand the relationship. *That is one driver, but the primary driver is to reduce discharge of treated wastewater into Budd Inlet. Upland discharge (through groundwater recharge) is a key element of the wastewater management plan, and it was included in the plan based on broad support from the public and the state. The result of supplementing groundwater supplies is considered an added, secondary benefit of recharge.*

Debra Jaqua:

If you stopped infiltration at Hawks Prairie, would there be capacity issues? *Yes, immediately. The water still has to be treated and has to go somewhere after treatment. It could not just be added to the amount currently discharged to Budd Inlet, as that amount is limited by state permit.*

Lyle Fogg:

Are there events that affect the microbial community, like drought? *Yes, things like moisture and temperature can change the populations somewhat.*

Debra Jaqua:

What about heavy metals? *We are not prepared to speak to those tonight, since the focus here has been on compounds of potential concern. However, in contrast to compounds of potential concern, metals are regulated and routinely monitored for. Their removals in soils and groundwater are primarily through sorption.*

Next Steps

Patricia Tennyson reminded the group to send any further comments on the public involvement handout to Lisa by April 17. She explained that the group will be receiving a number of work products that they will need to review before the next meeting, including a draft Public Involvement Plan.

Community Advisory Group – Groundwater Recharge Scientific Study

Meeting 5 – June 5, 2013 – Summary

Welcome and Initial Business

The meeting opened at 6:00 pm with Patricia Tennyson of Katz & Associates acting as the meeting facilitator. She stated that each Community Advisory Group member has received a large number of hand-outs and copies of materials tonight, but if they already have copies, they can leave extras with the Study team who will put them to good use.

Patricia then introduced LOTT Board member and Thurston County Commissioner Sandra Romero, who welcomed the group and thanked them for their hard work. She was happy to be able to attend the meeting, but could only stay for a portion of it.

Patricia then reminded group members and the audience about the policy for observers. Observers are welcome, but are asked to refrain from speaking during the meetings, with the exception of the public comment period. Meetings are intended for the benefit of the group members so they may complete their work products. This does not allow enough time for audience comments during the meeting.

Community Advisory Group members Maureen Canny and Bill Gill attended a recent meeting of the Scientific Study Task Force. Maureen reported that the meeting was very interesting. Bill Gill added that he wanted to attend the task force meeting because he has seen "bad" science in other studies and venues and was somewhat concerned about what was happening with the science side of this Study. He reported that he was very impressed by the work of the task force. He is confident that people who have the needed expertise are being pulled into the Study and that they are not going to hide facts. He is really satisfied with the science side of the Study work and with the fact that the task force is answering the questions the right way, without bias.

Community Advisory Group member Pixie Needham attended the LOTT Board meeting on May 8. She reported on her brief summary of the May advisory group meeting and explained that the consultant for the telephone survey attended the meeting and provided a report to the Board.

Public Comment

Members of the public in attendance were invited to make comments. Two did so:

Dennis Burke:

Mr. Burke provided a hand-out to the advisory group. He asked that the group members read his comments. He stated that he agrees that infiltration is a form of recharge. He then stated that LOTT has chosen the one and only spot that does not have a hard pan layer to do their

infiltration, and expressed his opinion that the water infiltrated at this site goes directly through the ground right into water supplies. He believes that it doesn't matter whether it is injection or infiltration. Recharge pressurizes the water table, and forces reclaimed water into wells. He also noted that LOTT says there are two mechanisms that occur during soil aquifer treatment that remove compounds of potential concern: biological decay and adsorption. He stated that this isn't true because of temperature. The groundwater aquifer is less than 40 degrees, and at that temperature, there isn't any biological activity. Our aquifers are that cold because the groundwater comes mostly from rain during the cold winter months. Adsorption isn't a treatment technology - it is storage. The material that is adsorbed can be desorbed. He further stated his opinion that LOTT's recharge basins create the perfect conditions for desorption and believes that is extremely dangerous. He then stated that desorption increases the concentrations of compounds, which desorb at much higher concentrations than they adsorb. He also stated his opinion that LOTT's processes also result in extremely prolific growth of cyanobacteria, which is also a serious issue. He feels these are all very important issues that need to be addressed.

Bob Jacobs

Mr. Jacobs referred to a statement in the informational materials prepared by LOTT: LOTT is conducting the Groundwater Recharge Scientific Study to help make the best reclaimed water management decisions for our health and the environment. He stated that this is simply not true. The *best* solution would be to remove all the pollutants from this water and that is not what this Study is doing. He expressed his opinion that this effort is a total sham and said it does nothing for his confidence in local government.

Report on Results of Public Opinion Research

Patricia provided a brief report on the structured interviews, including their purpose and how the interviews differed from the random sample telephone survey. Most of the interviewees were generally aware of community issues, but not necessarily aware of the need for reclaimed water and groundwater infiltration. This lack of awareness may be instructive for the public involvement efforts. The interviews were on average one hour in length, and were conducted with 53 individuals. During the interviews, participants were asked to review the original 10 public values established in 1996 that guide LOTT's activities and rate those values in terms of their importance and relevance today. The ten values were all still seen as important, with the three most important being: provide maximum benefits to the environment, meet current and future wastewater needs, and integrate LOTT's efforts with other related local issues, plans, and infrastructure programs. Most interviewees knew what LOTT did and thought LOTT was good at wastewater treatment and public education. Some felt LOTT could improve in terms of their utility rates, outreach to rural areas, and education about infiltration. Those interviewed generally thought that marine water quality was poor due to legacy issues, rivers were healthier than lakes, and groundwater was of high quality. Nearly all knew that groundwater was the source of their drinking water. Many of the questions and concerns identified by the Community Advisory Group related to infiltration were also shared by the interviewees. Nearly

all the interviewees were aware of compounds of potential concern, and had heard about them from a variety of sources. The interviewees provided a number of questions that the Study should address, and the full list of those questions was provided to the Study team to use in the scoping process. The interviewees also provided ideas for how to engage the public, and those were provided to the Study team and incorporated into the draft Public Involvement Plan.

Presentation: Shifting into the Scoping Phase of the Study

Karla Fowler, LOTT's Community Relations and Environmental Policy Director, explained that the intent of the first part of this presentation was to tie up a few of the big questions that the group has been wrestling with and that have come up in discussion several times. Those questions and brief answers follow:

Question 1:

Why not just discharge more wastewater to Budd Inlet, rather than infiltrating reclaimed water? What are the limits to discharging more to marine waters?

LOTT cannot discharge more water into Budd Inlet than our current permit allows. There are water quality issues in Budd Inlet, including low dissolved oxygen caused in part by excess nitrogen. One of the key parameters in LOTT's permit, which is issued by the state Department of Ecology, is nitrogen. Nitrogen removal was added at LOTT's Budd Inlet Treatment Plant in 1994, and it is very effective at removing nitrogen. There isn't much more LOTT can do to remove more nitrogen from the water, so it cannot discharge more water into Budd Inlet. The state already reduced the amount that LOTT can discharge once, when it renewed LOTT's permit in 2005. Ecology has made it clear that additional reductions may be added as a result of two state-level water quality studies – the Total Maximum Daily Load (TMDL) study for the Deschutes River/Capitol Lake/Budd Inlet and the South Puget Sound Dissolved Oxygen study. If LOTT's marine discharge is reduced as a result of these studies, that would increase the need to discharge upland through reclaimed water infiltration or other means.

Ruth Shearer:

Why not discharge to Nisqually Reach or somewhere where there's better circulation?
Karla explained that she would address that question shortly.

Karen Janowitz: What is the timeframe for those studies and results?

Both the TMDL study and the dissolved oxygen study have been delayed, in part so that modeling for one can be coordinated with the other. Both were anticipated for completion this year, but at this point, there is no specific timeline for their completion.

Question 2:

Is this effort just a marketing plan to sell the public on infiltration because there are no alternatives?

No, LOTT is not trying to sell the public on anything. This is a genuine effort to better understand the science and local conditions. There are alternatives, but they are different alternatives than

what were considered in the past as part of the long-range plan. Those alternatives were found to not be viable for a variety of reasons:

- *Discharging elsewhere – to freshwater rivers or other points within Puget Sound – was not an option because those waters are subject to similar water quality restrictions as those in Budd Inlet.*
- *Piping the water to another location, like Pierce County, for discharge was rejected because of the cost, environmental impacts, and concerns about turning over control to another government or entity that was not responsible to LOTT's ratepayers*

There are alternatives for how to manage reclaimed water in the future. They involve questions like:

- *How should the water be treated - to what level?*
- *What other reclaimed water uses can be implemented to reduce the need to infiltrate?*
- *What sites make the most sense for infiltration? Which don't make sense?*
- *Should the water be treated differently for different sites?*

The Public Involvement Plan is meant to engage public in genuine discussion and consideration of these tough issues. People need to be engaged so that they can understand the issues, and are ultimately willing to support and pay for whichever alternatives are preferred.

Question 3:

Why recharge when we live in a place where we have plenty of water? Are groundwater supplies really limited? Is there a benefit to recharging?

Even though we live in a place that seems to have plenty of water, that water is not always available when and where it is needed. Water use triples in summer when we have drought conditions. Groundwater withdrawals in the summer months can result in low streamflows, which impact fish and wildlife. Also, we have changed our environment with impervious surfaces like roads and roofs and parking lots, which makes natural recharge less likely. Supplementing groundwater does have benefits, not only for replenishing supplies, but also for supporting streamflows for fish and wildlife.

Question 4:

What is the link between reclaimed water and growth?

LOTT's primary driver for producing reclaimed water is the need for wastewater treatment capacity. That need exists because we live in growing communities. LOTT's role is to provide essential public services within the urban growth areas. When LOTT was established, the government partners were very explicit in making certain that LOTT's charge was clear – respond to needs for capacity, with no authority to control land use policies or growth. LOTT cannot impose a building moratorium, for example. That is outside LOTT's authority. LOTT's partner cities have other interests in reclaimed water – it can help supplement their water supplies through reuse for irrigation and non-potable purposes. Infiltrating reclaimed water can also be used as mitigation to help cities to obtain new water rights. The cities decide how they want to use reclaimed water - irrigation, mitigation, etc. For example, Lacey and Olympia are using it for water rights mitigation by infiltrating reclaimed water at the Woodland Creek

Community Park. There are groups, like the cities and local tribes, that have an interest in reclaimed water and the potential benefits it can provide, like streamflow enhancement and water rights mitigation, but those are secondary to LOTT's primary driver – the need to respond to the communities' needs for wastewater treatment capacity.

Question 5:

Why is the Study being conducted?

This Study is being conducted because people have questions. Thurston County's Critical Areas Ordinance process played a role, but LOTT had planned to conduct the Study before recharge emerged as an issue in the County's CAO update efforts. During the CAO update, the need for local data became apparent. The County is responsible for setting groundwater protections in place, and they set those protections based on "best available science". The science available related to groundwater infiltration with reclaimed water was generally from places that are not very similar to our region. Conducting this Study will help provide local science that can be applied in the County's update efforts. LOTT and the County are now working closely on the Study, with County staff members serving on the Technical Sub-Committee and the Scientific Study Task Force. The County will revisit CAO regulations as results of the Study are available.

Question 6:

What about all the other questions that the group has brought up?

We recognize we haven't answered all of your questions. We have tried to address the most burning of your questions, but couldn't get to all of them in the limited time that we have had to work with you. However, those questions have been instrumental in helping to develop the Public Involvement Plan and they will be used in developing the Study framework and scope of work. We will also continue to chip away at answering them for you as the Study progresses.

Scott Morgan:

You have referred to the idea that the Scientific Study will inform a decision-making process.

What will that process be?

That process hasn't been fully defined. It will depend on the types of alternatives that are identified as a result of the Study findings, community conversations about these issues, and any changes in local regulations.. Ultimately, the LOTT Board of Directors and/or the partner government city councils and county commission will make decisions about the future of reclaimed water management and how to implement LOTT's long-range plan.

Jeff Hansen, lead consultant with HDR Engineering, Inc., then gave a brief presentation on the scoping phase of the Study and a preview of the work that will come in the next phase. He began with a few definitions:

- Study framework - this is a set of activities that will help to answer some of the key questions that have been identified. Examples of activities are things like literature reviews, field work and data analysis. The framework will also explore the sequence of

activities and identify the questions that may not be able to be answered through this Study.

- Scope of work – this provides the details of those activities - the who, what, where, when, and how much (cost) of each activity. The scope serves as the contractual basis for the Study between LOTT and the consultant team doing the work.

Jeff explained that the framework will organize activities in general categories, and shared a preliminary draft framework as an example. Categories included in the example were: Baseline Water Quality Conditions, Groundwater Infiltration, Soil Aquifer Treatment, Risk Assessment, Cost Evaluation of Recharge Options, and Reporting. He then reviewed examples of the kinds of activities that would fall under a category, such as Baseline Water Quality Conditions. Activities might include looking at existing data, sampling groundwater, sampling surface water, etc. He then illustrated how the framework also can be used to ensure the community's questions are addressed by the activities. A question like "Are there compounds of concern in our groundwater and drinking water?" falls under that category of Baseline Data, and the activities of sampling groundwater and drinking water would help answer this question. Jeff then mentioned that the framework would also help to identify questions that wouldn't be addressed as part of the Study.

Pixie Needham:

Why wouldn't compounds of potential concern be studied? I don't see those as a category? *Jeff explained that compounds will be studied. They are not called out as a specific category because they will be addressed under all of the categories. His last example was meant to note that the Study itself will not set up a standards or regulations for compounds of potential concern. The findings of the Study will be used by policy makers to make decisions about infiltration.*

Discussion: Draft Public Involvement Plan

Lisa Dennis-Perez, LOTT's Public Communications Manager, reviewed some of the changes that were made to the diagram of the Study Scoping process and the draft Public Involvement Plan based on the comments and feedback received from Community Advisory Group members. Patricia then invited the group to provide additional feedback:

Karen Janowitz:

On Page 2, are communities really making the choices or decisions? This doesn't seem accurate. Decisions will be made by the LOTT Board and city and county governments. Also, Study goals should mention climate change, as that is an important issue. Clarify the wording on Page 3 "may not be implemented" – it's an awkward sentence. There is mention in the Implementation Phase about special video programs, like on TCTV, but it seems that should occur sooner, in the Scoping Phase. Special programs could provide basic education about groundwater, to give information early on, not just when information is coming out of the Study field work, and to encourage informed participation in the public meetings. Water

conservation should also be added to this plan. It is somewhat misleading to say reclaimed water can be treated to different levels to be safe for different purposes – that statement should be qualified so people understand there are associated costs.

Tina Peterson:

I agree with the point that water conservation needs to be included. Conservation is important to decrease the need for additional treatment capacity. Energy conservation was incredibly successful in reducing the need for new, expensive energy sources. Water conservation has the same potential benefit.

Lyle Fogg:

I have come to believe that we will always have compounds of concern. Even if we treat water for all the current compounds, industry will create more. How do we stop putting things in the waste stream in the first place? Personal decisions make a big difference. Local governments will make the decisions but they are not the ones we are working with. Is there room to teach the cities and their populations about these issues? The plan should include ideas for working with the local governments and encouraging personal responsibility so that people understand how they can help change the situation as a citizen.

Scott Morgan:

LOTT Board members will be taking these discussions back to their respective city councils and county commission. They may need assistance in educating their councils on this process. That support needs to be provided to Board members.

Holly Gadbaw:

In the last planning process, there were numerous work sessions with the city councils and commission to make sure they were “up to speed” and able to vote on various parts of the long-range plan. Environmental educators also need to be brought along, as well as utility committees and planning commissions. The program Around Thurston County interviews local groups about issues and activities – that would be a good way to educate the public. Also, all these activities in the plan sound great, but how much of this can really be done given the budget? What is the budget?

Dick Wallace:

I see that the Study goals listed in the plan are missing some connections to the questions and categories in the framework. The goals should be revised to make sure they align with the framework. Risk assessment should be addressed in the goals, as should assessing alternative treatment or plans and the associated costs. I understand we may not be able to change the Study goals at this point, but they should be revisited and adjusted to fit with the framework at some point.

John Cusick:

Terminology is a concern. Recharge is one term – it tends to be associated with direct injection. Why not just call it infiltration instead? Also, “Implementation Phase” doesn't quite explain what it means – it needs to be clear that it is in reference to implementation of the Study, not something else like implementation of groundwater recharge. I suggest the terms Study Scoping and Study Implementation to clarify the intent (this was supported by other group members). Also, use of the word "production" in terms of reclaimed water seems odd and should be reconsidered.

Patricia then invited advisory group members to send any final comments on the Public Involvement Plan to Lisa by Friday, June 7. There will be opportunity to revise the Plan further after that date, but the draft needs to be as complete as possible for submission to the Board of Directors on Friday afternoon.

Discussion: Wrapping Up Phase 1 Work

Patricia invited the group to provide feedback on the draft Final Report of Phase 1 Work. The group discussed the question of terminology, but had no clear recommendation regarding preferred terms. Recharge has connotation of direct injection, but it might be necessary to consider injection someday. Also, infiltration is less clear on the intent or result of "recharging" the groundwater, so it might be seen as misleading. Recharge seems more appropriate to what LOTT is doing; infiltration or percolation could happen anywhere in terms of rainwater. The group agreed that the question needs further consideration, maybe through the focus groups that are included in the Public Involvement Plan as a suggested future activity. Also, there is benefit to sticking with terms already defined by the state. For now, these documents will use the term “recharge”, in some places specifying “recharge through infiltration”.

Patricia explained that the Final Report includes all meeting summaries and the Meeting 5 Summary will go out to the group soon for review so it can be included in the final report.

Lyle Fogg:

If I were to talk to city council, does LOTT have concerns about how to characterize myself? *The group discussed this and agreed that members are free to comment or testify in other venues and indicate that they are members of the Community Advisory Group, as long as they also make clear that they are speaking for themselves, not on behalf of the group.*

Discussion: Scoping Phase – Role of the Community Advisory Group

Lisa reviewed some changes in the role of the advisory group as they shift into the Scoping Phase of the Study. The group will be more engaged in the science side of the Study, reviewing the draft framework and the scope of work. They will also be asked to continue their role as the critical eyes of the Study, pushing the Study team to address the key considerations and varied community perspectives.

Patricia then asked the group to indicate if they were willing to continue their service into the next phase of the Study. They responded as follows:

Bill Gill:

Bill explained that he did not wish to continue. His main concern had been that the science might not be done correctly, but now he felt satisfied that this is a quality science effort, so did not see the need to continue. He did ask to remain on the mailing list.

Ruth Shearer:

Ruth stated that she is not sure if she should continue. She is interested, but transportation has become an issue. Several members of the group volunteered to help her get to and from future meetings.

Emily Lardner:

Emily's alternate, Enrique Quintero, stated that since Emily was not present, he did not want to speak for her. Lisa will contact her by phone and ask her if she would like to continue as a member.

Marissa Dallaire and Azeem Hoosein:

These members were not at the meeting. Lisa will contact them by phone to ask if they wish to continue.

Scott Morgan, Karen Janowitz, Tina Peterson, Pixie Needham, Dick Wallace, John Cusick, Maureen Canny, Holly Gadbow, Ed Steinweg, Bill Liechty, and Lyle Fogg all indicated that they wish to continue into the next phase of the Study.

Next Steps

Patricia then reminded the group that any final comments on the Public Involvement Plan should be sent to Lisa by Friday. The group seemed satisfied with the changes proposed for their Final Report, so that will be revised and submitted to the Board for review.

Karen Janowitz:

When does the Scientific Study task force meet?

That group meets the fourth Thursday of each month and Community Advisory Group members are welcome to attend. An email reminder will be sent out the group before each Task Force meeting in case members are interested in attending as observers.

Ben McConkey, LOTT Project Manager for the Groundwater Recharge Scientific Study, handed out a packet of background scientific information, including a State of the Science literature review completed as part of Phase 1 on the science side of the Study. The packet also included a flier from King County explaining their research on reclaimed water issues, a series of fact sheets from the WateReuse Research Foundation about the relative risk of recycled water, and

fact sheet from the National Academy of Sciences summarizing a recent study on planned and unplanned (de facto) potable reuse.

Celebration and Thank You

Patricia then provided each member of the Community Advisory Group with a letter from the LOTT Board of Directors thanking them for their service during the first phase of the Study. The Study team also thanked the group members and the meeting ended with a celebration to mark the end of the first phase of the group's work.

Appendix C: Public Opinion Research Survey, Questionnaire, and Interviewees



MARKET
& OPINION
RESEARCH
SERVICES

811 First Avenue
Suite 451
Seattle, WA 98104
(206) 652-2454 TEL
(206) 652-5022 FAX

436 14th Street
Suite 820
Oakland, CA 94612
(510) 844-0680 TEL
(510) 844-0690 FAX

3857 N. High Street
Suite 302
Columbus, OH 43214
(614) 268-1660 TEL
EMCresearch.com

Residents Telephone Survey, selected zips in Thurston County WA

n=400

Hello, my name is _____, and I'm conducting a survey for EMC Research to find out how people in the area feel about some issues facing Thurston County. This is not a sales or telemarketing call, and I am not asking for a donation of any kind. Your answers to this survey are strictly confidential and will be used for research purposes only.

1. Can I speak to the youngest male at home right now? (**PROMPT IF NEEDED**): over the age of 18?
 1. Yes → **CONTINUE**
 2. No → **IS THERE ANOTHER PERSON AGE 18 OR OVER AVAILABLE**
 2. Gender (BY OBSERVATION)
 1. Male
 2. Female
 3. What year were you born? (**REFUSED=99999**)
[**RECORD YEAR: Valid Range 1910-1995**]
 4. [**AGE - CODE AGE FROM Q35 BIRTH YEAR, IF "REFUSED"**] Are you (**READ LIST**)
 1. 18 to 24
 2. 25 to 34
 3. 35 to 44
 4. 45 to 54
 5. 55 to 64
 6. 65+
 7. (DNR: Refused)
-
5. Just to be sure we're calling the correct area, what is your zip code? [**DO NOT READ – ACCEPT ONE RESPONSE**]
 1. (98501)
 2. (98502)
 3. (98503)
 4. (98506)
 5. (98512)
 6. (98513)
 7. (98516)
 8. Other/Don't Know/Refused → **THANK AND TERMINATE**

[IF Q5=2, ASK Q6. IF Q5=5, ASK Q7. IF ELSE OTHER THAN 8, SKIP TO Q8]

6. (IF 98502) Are you east or west of Delphi (DELL-fhye) Road?
1. East → CONTINUE
 2. West → **THANK AND TERMINATE**
 3. Don't Know → **THANK AND TERMINATE**

[SKIP TO Q6]

7. (IF 98512) Are you east or west of the waterways of Mudd Bay or Eld Inlet?
1. East → CONTINUE
 2. West → **THANK AND TERMINATE**
 3. Don't Know → **THANK AND TERMINATE**

(RESUME ASKING EVERYONE)

8. To begin, what do you think is the most important environmental issue facing the area?
(TAKE ONE RESPONSE)

98. (Don't know)

99. (Refused)

9. Moving on, do you have a favorable or unfavorable opinion of the LOTT (**LOT, as in a lot of something**) Clean Water Alliance, or have you never heard of LOTT? **[NOTE: If respondent says "Don't know," "No opinion," or something similar that is not Favorable/Unfavorable, probe for Can't Rate/Never Heard: "Would you say that you have heard of LOTT but cannot rate LOTT or have you never heard of LOTT?"]**
1. Favorable
 2. Unfavorable
 3. (DNR: Can't Rate)
 4. (DNR: Never Heard)

[IF Q9=4 "DON'T KNOW" SKIP TO Q11, ELSE ASK Q10]

10. How would you describe what the LOTT Clean Water Alliance does? (**ACCEPT TWO RESPONSES**)

98. (Don't know)

99. (Refused)

[RESUME ASKING EVERYONE]

11. From what you know, what is the source of the drinking water in your tap at home? **(DO NOT READ – ACCEPT ONE RESPONSE)**

OTHER:

-
1. (Mountain reservoirs)
 2. (Rivers and lakes)
 3. (Groundwater)
 4. (Budd Inlet)
 5. (Puget Sound)
 98. (DNR: Don't know)
 99. (DNR: Refused)

12. And who or what provides your drinking water? **(READ LIST – ACCEPT ONE RESPONSE)**

OTHER:

-
1. City service
 2. Private well
 3. (DNR: Don't Know)
 4. (DNR: Refused)

[IF Q12=1 "City service" ASK Q13; ELSE SKIP TO Q14]

13. Which city? **(READ LIST – ACCEPT ONE RESPONSE)**

1. Lacey
2. Tumwater
3. Olympia
4. A different city
98. (DNR: Don't know)
99. (DNR: Refused)

[RESUME ASKING EVERYONE]

14. Does your home have a septic system or are you connected to a public sewer system for wastewater collection and treatment? **(READ LIST - ACCEPT ONE RESPONSE)**

1. Septic
2. Public Sewer System
3. (DNR: Don't know)
4. (DNR: Refused)

[IF Q14=2 "Public Sewer System" ASK Q15; ELSE SKIP TO Q17]

15. Which system are you connected to? **(READ FIRST THREE - ACCEPT ONE RESPONSE)**

1. Lacey
2. Tumwater
3. Olympia
4. A different system
98. (DNR: Don't Know)

99. (DNR: Refused)

[IF Q15=4 ASK Q16; ELSE SKIP TO Q17]

- 16. Which system?
 - 1. (LOTT)
 - 2. (Beverly Beach)
 - 3. (Tamoshan)
 (TAKE ONE RESPONSE)

98. (Don't know) 99. (Refused)

[RESUME ASKING EVERYONE]

- 17. What, if anything, have you heard about reclaimed water? **(ACCEPT TWO RESPONSES)**

98. (Don't know) 99. (Refused)

I'm going to ask you about some potential uses for reclaimed water in your community. Reclaimed water is wastewater that is treated and cleaned so that it can be used again for almost any use except drinking. Please tell me if you strongly oppose, somewhat oppose, somewhat favor or strongly favor each of the potential uses of reclaimed water. **[AFTER EACH UNTIL UNDERSTOOD: Do you oppose or favor that use for reclaimed water? IF OPPOSE: Would that be strongly or somewhat oppose? IF FAVOR: Would that be strongly or somewhat favor?**

- SCALE:**
- 1. Strongly oppose
 - 2. Somewhat oppose
 - 3. Somewhat favor
 - 4. Strongly favor
 - 5. (DNR: Don't Know/Undecided)
 - 6. (DNR: Refused)

[RANDOMIZE]

- 18. Watering landscaping at golf courses and along streets and buildings
- 19. Watering landscaping at parks and ballfields
- 20. Putting it into streams and rivers to improve streamflows

[END RANDOMIZE]

- 21. Reclaimed water can also be used for groundwater recharge by allowing the water to slowly filter through the soil, just like rain, until it reaches and replenishes groundwater. Do you strongly oppose, somewhat oppose, somewhat favor or strongly favor using reclaimed water for groundwater recharge?
 - 1. Strongly oppose
 - 2. Somewhat oppose
 - 3. Somewhat favor
 - 4. Strongly favor
 - 5. (DNR: Don't know/Undecided)
 - 6. (DNR: Refused)

[IF Q21= 1 “Strongly Oppose” OR 2 “Somewhat Oppose” ASK Q22]

[IF Q21= 3 “Somewhat favor” OR 4 “Strongly Favor” ASK Q23]

22. What are the main reasons you oppose this use? **(ACCEPT TWO RESPONSES)**

97. (No Reasons) 98. (Don’t know) 99. (Refused)

[IF Q21= 3 “Somewhat Favor” OR 4 “Strongly Favor” ASK Q23, ELSE SKIP TO Q24]

23. What are the main reasons you favor this use? **(ACCEPT TWO RESPONSES)**

97. (No Reasons) 98. (Don’t know) 99. (Refused)

[RESUME ASKING EVERYONE]

24. What concerns or questions, if any, do you have about reclaimed water? **(ACCEPT TWO RESPONSES)**

97. (No Questions) 98. (Don’t know) 99. (Refused)

25. Have you heard anything about compounds, such as those from medicines, soaps, shampoos, cosmetics, household and yard care products, that may be present in water, wastewater, or reclaimed water?

1. Yes
2. No
3. (Don’t Know/Not Sure)
4. (Refused)

[IF Q25= 1 “Yes” ASK Q26; ELSE SKIP TO Q27]

26. What have you heard? **(ACCEPT ONE RESPONSE)**

98. (Don’t know) 99. (Refused)

(RESUME ASKING EVERYONE)

27. On a scale of one to five, where one is very concerned and five is not concerned at all, how concerned are you about medicines, soaps, shampoos, cosmetics, or household and yard care products that may be present in water, wastewater, or reclaimed water?

- 1. Very Concerned
- 2.
- 3.
- 4.
- 5. Not concerned at all
- 6. (DNR: Don't know)
- 7. (DNR: Refused)

[IF Q27 = 1 OR 2 OR 3 ASK Q28; ELSE SKIP TO Q29]

28. What is your main concern? **(DO NOT READ LIST - ACCEPT MULTIPLE RESPONSES)**

OTHER:

-
- 1. (Human Health)
 - 2. (Children's Health)
 - 3. (Fish)
 - 4. (Wildlife)
 - 5. (Groundwater)
 - 6. (Environment)
 - 7. (Other Specify: _____)
 - 8. (DNR: Don't know)
 - 9. (DNR: Refused)

[RESUME ASKING EVERYONE]

I'm going to ask you who you would trust most to talk about the science, treatment, and use of reclaimed water. For each of the following people and organizations, please tell me how trustworthy you think that person or organization is on this issue. Please use a scale from one to five where one is not at all trustworthy and five is very trustworthy. **(REPEAT AFTER EACH UNTIL UNDERSTOOD)** Use a scale from one to five where one is not at all trustworthy and five is very trustworthy.

SCALE: 1 2 3 4 5 | 6
Not at all trustworthy Very trustworthy | **(DO NOT READ)** Don't know/Refused

How trustworthy do you find **(INSERT STATEMENT)**

[RANDOMIZE]

- 29. An elected official
- 30. A private consultant
- 31. A college professor
- 32. A scientist
- 33. A physician
- 34. Your local wastewater utility

- 35. A public health agency
- 36. A state or federal environmental agency such as the Department of Ecology or the US Environmental Protection Agency

[END RANDOMIZE]

- 37. How interested are you in local news and information. Would you say you are **(READ LIST)**
 - 1. Very interested
 - 2. Somewhat interested
 - 3. Not interested
 - 4. (Don't Know)
 - 5. (Refused)
- 38. What are the top two ways you usually get local news and information? **(DO NOT READ – ACCEPT TWO RESPONSES).**
 - 1. (Local newspaper - the Olympian)
 - 2. (Radio)
 - 3. (Websites)
 - 4. (Email)
 - 5. (Television)
 - 6. (Utility bills)
 - 7. (Newsletters)
 - 8. (Facebook)
 - 9. (Twitter)
 - 10. (Public Meetings)
 - 11. (Mailings)
 - 12. (Family and friends)
 - 13. Other Specify: _____)
 - 97. (Nothing)
 - 98. (DNR: Don't know)
 - 99. (DNR: Refused)

Now, I'd like to ask you some questions for statistical purposes only.

- 39. Do you live in a **(READ RESPONSES)**
 - 1. Single family home
 - 2. A building with 2 to 4 units
 - 3. A building with five or more units
 - 4. (DNR: Don't know)
 - 5. (DNR: Refused)
- 40. Do you own or rent your apartment or home?
 - 1. Own
 - 2. Rent
 - 3. (DNR: Don't know)
 - 4. (DNR: Refused)
- 41. Do you have any children under the age of 10 living in your home?
 - 1. Yes

2. No
 3. (DNR: Don't know)
 4. (DNR: Refused)
42. What is the last grade you completed in school? **(READ CODES IF NECESSARY)**
1. Some grade school
 2. Some high school but didn't graduate
 3. Graduated High School or earned GED
 4. Some College but didn't graduate
 5. Graduated with an Associates or 2 year degree
 6. Graduated with a Bachelors or 4 year college
 7. Graduated with a Masters, Professional, or Doctorate
 8. (DNR: Don't Know/Refused)
43. What race would you classify yourself as? **(READ CODES IF NECESSARY)**
1. White/Caucasian
 2. Black/Afr. American
 3. Asian
 4. Native Hawaiian/Pacific Islander
 5. American Indian/Alaska Native
 6. Hispanic/Latino
 7. Multiple Races
 8. Other
 9. (DNR: Don't Know/Refused)

THANK YOU!



Structured Interview Questionnaire

Name: _____ Interviewer: _____
Organization: _____ Date: _____

Thank you very much for taking time to talk with me today. My name is _____ and I am working with the LOTT Clean Water Alliance. LOTT is beginning a large-scale regional study and wants to be sure that community values are included in the study, so this interview will help LOTT accomplish that objective. The information gathered today will be part of a report that will include a list of everyone we talked to, but we will not attribute any specific comments to a specific person. Before we begin, do you have any questions?

1. What has been your past involvement with local water or wastewater management issues?
2. Are you familiar with the services that LOTT provides? Please tell me any services you think are particularly important.
3. What do you think LOTT does the best? What do you think LOTT needs to work on?

If interviewee is not at all familiar with LOTT, use the following description: The LOTT Clean Water Alliance provides wastewater treatment for the urban areas of Lacey, Olympia, and Tumwater in north Thurston County.

4. Here is a list of public values (*provide interviewee with a written list of the 10 values*) that were developed during LOTT's development of its reclaimed water plan. LOTT is interested in knowing whether these values are still applicable today. Please rank these in importance, using a scale of 1 to 4, with 1 being not at all important and 4 being very important. Also, add any values that you think should be included.
5. Most of the water LOTT treats is discharged into Budd Inlet, which is at the southern end of Puget Sound. What is your sense of the general quality and health of those marine waters?
6. What is your sense of the general quality and health of the freshwater sources in this region?
 - a. Rivers and lakes
 - b. Groundwater
 - c. Etc.
7. Where does your drinking water come from at your home and your workplace? Who provides your water service?
8. Do you have city sewer service or a septic system for handling your wastewater?
9. If on a sewer system, which one – LOTT (Lacey-Olympia-Tumwater), Yelm, Tenino, or one of the Thurston County systems (Tamoshan, Beverly Beach, Seashore Villa, Boston Harbor)?

10. Are you familiar with the concept of reclaimed water? Are you familiar with uses of reclaimed water in this area? (*Probe for examples of reclaimed water use.*)
11. Do you believe there are benefits to reclaimed water use in this area? If so, what do you think are the most important benefits?
12. Do you have any concerns about the use of reclaimed water? Please explain.
13. Are you familiar with groundwater infiltration or recharge using reclaimed water?
(*Definition if needed: Reclaimed water can be used for groundwater recharge by creating areas where the water slowly filters through the soil into groundwater.*)
14. What is your opinion of groundwater infiltration/recharge? Do you have any concerns about using reclaimed water for groundwater infiltration or recharge?
15. Do you recall seeing or hearing any information about compounds, such as those from medicines, soaps, shampoos, cosmetics, and household and yard care products that may be present in water, wastewater, or reclaimed water? What have you heard? Where did you see or hear this information?
16. Would you say these compounds are of concern to you? Why? (human health, fish, environment, etc.)

LOTT is beginning a large-scale regional study to learn more about local groundwater conditions, compounds that might be present in reclaimed water, and what happens to those compounds when reclaimed water is used for groundwater recharge.

17. In your view, what are the most important questions this study should answer?
18. Who would you most trust to provide you with reliable information about water quality, reclaimed water, wastewater treatment, or groundwater recharge?
19. How or where do you normally get information about water, reclaimed water, or wastewater treatment?
20. LOTT wants to ensure there is active community dialogue throughout the study. What do you think are the best ways to get you and other area residents engaged in community discussions about these topics?
21. Is there anyone else you would suggest we talk with about these issues? Any organization we should meet with to discuss reclaimed water and groundwater recharge?
22. Is there anything else you wish I had asked you, or that you would like to add, about LOTT, reclaimed water, or groundwater recharge?

Interviewees	Interest/Affiliation
Robert Berquist	Department Of Ecology SW Regional Water Quality Manager
Tom Brand	Timberline High Biology Teacher
Allyson Brooks	League Of Women Voters Of Thurston County
Heather Burgess	Land Use Attorney, Phillips Wesch Burgess
Dennis Burke	Water Purveyor - Small Water System
Dr. Paul Butler	Hydrogeologist and TESC Professor
Stephen Buxbaum	Mayor, City of Olympia
Michael Cade	Economic Development Council (replaced Tiffany Scroggs)
Lanny Carpenter	Well Driller
Jim Casebolt	Pattison Water Company
Virgil Clarkson	Mayor, City of Lacey
Bill Cullen	Former Head Of Thurston County Groundwater Committee, Rotary
Josh Cummings	Thurston County Sustainability Officer
Thad Curtz	City Of Olympia Utility Advisory Committee
Doug Deforest	Former Executive of Olympia Master Builders, Kiwanis, WRIA 13, TRPC
John Demeyer	State DNR Aquatic Lands Mgr, Past Dairy Farm Manager
John Dodge	The Olympian
Al Ewing	Epa Water Quality Planning, Homeowner's Association
Jenna Glock	Science Teacher Middle School, Parent, County Resident
Jon Halverson	Former Lacey Council Member, Kiwanis
Jennifer Holderman	Grants And Loans Manager, Ecology, Former Teacher
Dr. Maria Huang	Pediatrician, Parent of Young Children
William H Jackson	Commercial Banker, Thurston County Planning Commission, Rotary
Bob Jacobs	Former Olympia Mayor
Jeffrey Jaksich	Civic Involvement in Water Related and Other Issues
Debra Jaqua	Black Hills Audubon Society (suggested by Sam Merrill)
Steve Kalinowski	Fish and Wildlife (instead of Michele Culver)
Pete Kmet	Mayor, City of Tumwater
Don Lange	Wastewater Plant Operator, Small Water System Customer

Interviewees	Interest/Affiliation
Glen Morgan	Stop Thurston County
Jane Mountjoy-Venning	Thurston County Environmental Health (replaced Jennifer J.)
Dan O'Neil	Large ranch agricultural operation along Deschutes River
Linda Oosterman	Thurston Public Utility District Commissioner
Dave Peeler	Former Dept. of Ecology Water Quality, People For Puget Sound
Jim Peters	Tribal Council Member, Squaxin Island Tribe
David Schaffert	Thurston County Chamber Of Commerce
Bob Simmons	Washington State University Extension
Alexandra Smith	Port of Olympia, Alliance for Healthy South Sound
Lisa Smith & Daughter	Enterprise For Equity
Richard E Swanson	Civil Engineer, Private Well Owner, Faith Community Volunteer
Jeff Swotek	NRCS/USDA - agricultural community
Janine Unsoeld	SPEECH, Green Pages, Blogger
Arthur Vaeni	Interfaith Works, Olympia Unitarian Church (replaced Daniel Kadden)
Karen Valenzuela	Thurston County Board Of Commisisoners
Sally Vogel	Chair Of Panorama Green Team
Kathleen Whalen	Thurston Conservation District
Angela White	Olympia Master Builders (replaced Laura Worf)
Brian Wilson	Downtown Liaison, Business & Social Connections
Bryan Wilson	Former SWAB member
Lance Wineka	South Puget Sound Salmon Enhancement Group
Lon Wyrick	Thurston Regional Planning Council
Dr. Diana Yu	Thurston Co Health Officer