

# **LOTT Clean Water Alliance**

## **Groundwater Recharge Scientific Study Public Opinion Research**

### **Structured Interviews: Summary Report**

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## INTRODUCTION

In March and April 2013, Katz & Associates conducted in-depth interviews with 53 LOTT Clean Water Alliance (LOTT) stakeholders. The purpose of the interviews was to gauge awareness and perceptions about LOTT, water, wastewater, reclaimed water and groundwater recharge, as well as obtain feedback on questions that LOTT's Groundwater Recharge Scientific Study (the Study) should answer and suggestions for engaging the public in discussions about the Study.

### ***Methodology***

In-depth interviews are a qualitative research method used in advance of or in addition to quantitative methods. This method is best suited for uncovering the range of views, beliefs, attitudes, opinions, and experiences that may exist in a certain population. With in-depth interviews, a trained interviewer uses a discussion guide to conduct a structured conversation with participants. A public opinion random sample telephone survey (a quantitative study) was also conducted during March 2013.

### ***Interviewers***

The structured interviews were conducted by Katz & Associates Executive Vice President, Patricia Tennyson, and Senior Account Supervisor, Karen Snyder.

### ***Interview Participants***

Interview participants were identified through a series of steps. The LOTT Board of Directors identified general categories of interests and expertise that should be involved in the Study. These were referred to as "touchstone categories." Members of the Community Advisory Group (formed to assist with the Study) and LOTT staff developed a list of potential interviewees and/or organizations and agencies that could represent the touchstone categories. These individuals and groups were identified based in part on their known interest, affiliations, experiences and/or their ability to represent a range of community perspectives and touchstone categories. The LOTT Board of Directors approved the final list of interviewees that included representation from such interests as:

Academia	Health Community
Agriculture	Local Government
Business/Economic Interests	Media
Civic Groups or Organizations	Planning
Development	Science
Educators	State Regulators
Elected Officials	Tribal Interests
Environmental Community	Water Providers
Faith-Based Organizations	Well Drillers

The original goal was to interview 50 individuals, however 53 in-person interviews were conducted (See Appendix A for a list of those interviewed). On behalf of LOTT, HDR Engineering, Inc. contacted each potential interviewee, providing a consistent explanation of the request to potential interviewees. Potential participants were told the interviews would take approximately one hour and were asked to meet interviewers at LOTT offices in order to maximize time available for interviews. In cases where potential interviewees could not be reached on first contact, additional contacts were initiated.

The interviews used a “non-probability sample,” meaning the sample was not meant to be statistically representative of a larger group, and the size of the group would not affect the integrity of the data collected.

### ***Anonymity***

Interview participants were told that the list of interviewees would be included in this report; however, their responses, including quotations, would be incorporated anonymously. Participants were promised anonymity to encourage candid feedback. This report uses the pronoun “he” in all cases, whether referring to a male or female respondent, to preserve anonymity.

### ***Structured Interview Guide***

A list of 21 questions (some with subsections) was prepared as a discussion guide for all interviews (See Appendix B for the structured interview discussion guide). The guide included unprompted questions, meaning the questions were open-ended, and the interviewer did not suggest possible answers. In other questions, the interviewer asked about a specific issue or topic. As appropriate, interviewers asked follow up questions not on the guide to fully explore a topic.

### ***Interview Length***

Interviews ranged in length from 45 minutes to one hour and 30 minutes, with the majority of interviews lasting approximately one hour. Interviewers did not cut off the discussion. Instead, interviewers encouraged using as much time as each participant could provide to allow for the maximum opportunity for discussion.

### ***Method Limitations***

Like other qualitative methods, in-depth interviews allow for detailed exploration of topics, but do not provide data that is statistically representative of a larger population. This report makes note of trends among interview participants when applicable, but those trends cannot be generalized. Instead, the information obtained is descriptive and should be considered as representing a range of opinions that may exist among stakeholder segments. It should also be noted that opinions may not necessarily be factually accurate. Some of the concepts explored, such as awareness and concern about water issues and overall opinions of LOTT, have also been tested in the random-digit-dial telephone survey. The telephone survey results will provide “generalized” information about opinions held by those residing in LOTT’s service area.

## ***Report Format***

This report summarizes responses from interview participants. The first section summarizes responses from all participants. Occasionally a response will be in quotes to indicate a specific comment, although the interviews were not recorded and remarks are not verbatim. These remarks are included to give the reader a flavor for the language interview participants used when discussing LOTT issues.

## **SUMMARY OF RESPONSES**

In general, there is a highly engaged stakeholder base in the Lacey, Olympia, Tumwater, and Northern Thurston County region – evidenced by the high percentage of people agreeing to participate in the one-on-one interviews. Within this community base there were widely ranging opinions on all topics discussed. Each of the question summaries below could be preceded by the statement – “A range of perceptions and opinions were expressed.” However, all interviewees agreed in some fashion that the region’s water resources are precious and must be protected.

Individuals participating in the structured interview process had varied degrees of involvement in local water and wastewater issues: experience ranged from a great deal of involvement either as an elected official, a regulator, government employee, or tribal representative, to previous involvement in the process LOTT used to develop the original public values statements that participants ranked during this interview, to little or no involvement or knowledge about these issues. Some have been involved because their profession requires them to interact with LOTT on permitting issues, others participate in the various educational opportunities offered with the WET Science Center, still others belong to groups that focus on environmental issues, and some have been supporters or opponents of LOTT initiatives over the years.

### ***Knowledge of LOTT’s Services***

Almost all of the participants in the interview process mentioned wastewater treatment when asked to identify what services LOTT provides that are particularly important. As one participant put it, “They are the ‘sewer guys’ and provide treatment when we need it.” The WET Science Center and “purple pipes” were also mentioned by about 15 percent of participants. A smaller group mentioned groundwater recharge. Also mentioned were public relations and biosolids.

There were at least two participants who said they did not know what LOTT did.

### ***Perceptions of LOTT***

Interview participants were asked what they think LOTT does best and what they think LOTT should work on or improve in the future. The number of comments was about equal for each of these questions, but there were several individuals who said they had nothing to offer about areas where LOTT could improve.

#### **What LOTT Does Best**

Almost half of the interview participants said that what LOTT does best is provide efficient management and operation of its wastewater treatment plants. The second most frequent

response, shared by about 20 percent of participants, was public education. LOTT's ability to place wastewater treatment in the context of the hydrologic cycle was particularly impressive to some. Another observed that LOTT has worked to stay connected to tribal staff in a positive way. LOTT is also viewed by some as a leader in the field, an organization that does good planning and looks to the future, and a proactive, state of the art organization. The forward-looking nature of LOTT was credited to Board leadership and the personalities and technical expertise of the staff. Some interviewees also said they thought LOTT has fair rates, though this viewpoint was challenged by other individuals. Other things mentioned that LOTT does well include water reuse, conservation, stewardship of resources, and public relations. LOTT's building was also cited by several participants as providing a good example of green architecture.

### Areas Where LOTT Could Improve

When it comes to areas where LOTT could improve, the most frequently mentioned area was cost: their services "cost a lot" and "are pretty expensive" were how some phrased their comments. Another said, "I don't understand why their rate increases are so high – it is hard to correlate with usage." One individual observed that one reason LOTT's costs stand out is that their charges are often the biggest part of a utility bill. Another suggested that LOTT should more clearly explain the billing process as people in the partner cities ask their city agencies about the LOTT line item. There were also suggestions that more emphasis might be placed on equating water conservation with energy conservation or that LOTT might want to consider whether changing their governance structure would result in more efficiency.

Although LOTT is often lauded for its public education efforts, some participants suggested they need to educate the community about what they do, why rates increase and the discharge limits for Budd Inlet, as well as the concept of groundwater infiltration. One person observed that infiltration is a new concept to many people who don't understand wastewater treatment at all. It was also surprising to one individual to see LOTT apparently at odds with one of its partner agencies during the hearings on the County's Critical Areas Ordinance. Along this same line, there was a suggestion that LOTT needs "to build stronger bridges with the rural communities" and do more outreach and education in the more rural parts of Thurston County. One observation was that rural lands are needed to preserve open spaces and for growing local food, not just "as places to dump water."

Several participants alluded to a general theme that perhaps LOTT "jumped ahead on groundwater infiltration" or "put the cart before the horse" since they now appear to be asking if groundwater infiltration "is a good idea." And while this may not be the purpose of the Study, several interviewees perceive that LOTT is only conducting the Study "because they were pushed into it." One interviewee was glad to see there will be a public process involved in the Study as "there is room for improvement in this area." It was suggested that televising LOTT Board meetings and other informational programs might increase public understanding of these issues. Another, however, mentioned the strong science, proven approaches, and investment that went into the existing plan for how to use reclaimed water, and hoped LOTT would "stay the course" as wavering sends mixed messages.

Other comments included noting that LOTT might be able to address the need for fewer septic systems in the county, although it is hoped this can be accomplished without being a burden to homeowners. Still others were critical of technical competence at LOTT and one individual believed that LOTT's permit was for surface water discharge, not for recharging groundwater basins. Some emphasized that if LOTT concludes there needs to be a higher level of treatment for reclaimed water before it is used for infiltration, this would need to be clearly and transparently explained, as would the costs associated with such treatment.

## **Public Values**

Each interviewee was provided with the list of public values developed in 1996 following the first round of public opinion surveying associated with development of LOTT's long-range Wastewater Resource Management Plan. As explained to each interviewee, LOTT is interested in gauging whether these values are still applicable, and how they rate in importance today. Interviewees were also asked to add any values that should be included. Many interviewees ranked all values at 4, or very important. One individual commented, for example, that "it is hard to say any of these are not 'very important' except for maybe the last two." Another observed that "some statements are vague – this list could be more focused." There was also some hesitancy with regard to the "treasure wastewater as a long-term resource" with a few individuals saying they were not persuaded by this message.

Several interviewees commented on this exercise as follows:

- What is not mentioned is the notion of a comprehensive plan for the future that includes other jurisdictional issues besides those LOTT normally addresses. LOTT is only one part of the community and the planning might be more representative if there were a larger policy board that reflects a larger range of viewpoints.
- When the highly managed plan was put together, they were thinking mainly about financial impacts. But maybe what was proposed in this plan is not as safe as was once thought and we need more analysis of public health and environmental impacts. Maybe wastewater should be treated to a higher level and there should be more discharge to Budd Inlet.
- A lot of water issues are regional and while LOTT has a role, does it have a primary role, especially with regard to regulations related to water sources?
- Should energy be in here in some way? We are rich in groundwater, so maybe in the future we should trade water for energy.
- Stormwater needs more planning ahead of time, which will require additional communication with land use agencies, so retention ponds and other infrastructure is constructed, and stormwater can be cleaned up more.
- Has anyone looked at the potential for sea level/Puget Sound level rise as a result of climate change and what the impact would be on having the main wastewater treatment plant located downtown?
- Cities have not done a good job of enforcing regulations, especially in hooking up sewer lines. Should LOTT be more involved in that issue?

The table below summarizes the average rating for each of the ten values based on the 2013 interview process.

Value #	Value Statement	Average Rating
1	As a first priority, <b>maximize utilization of LOTT's existing treatment capacity.</b> Manage demand to avoid or delay the need for new treatment capacity.	3.47
2	Prepare a plan that <b>meets current and future wastewater needs</b> throughout the LOTT service area. Accommodate planned growth, consistent with LOTT's legal requirements.	3.78
3	Select wastewater facilities for the region's future that yield <b>maximum benefits to the environment.</b> Mitigate any potentially adverse impacts of new facilities.	3.86
4	Take all possible steps to <b>control facilities costs.</b> Carefully consider the lowest cost and most cost-effective alternatives, and evaluate the impact on LOTT ratepayers.	3.33
5	<b>Treasure LOTT's treated wastewater as a valuable, long-term resource</b> to be cleaned and restored, reused, then ultimately returned to the environment.	3.53
6	Clearly define, demonstrate and document the value to the community of new facilities needed for the future. Design any new LOTT facilities to <b>produce multiple benefits for the community.</b>	3.31
7	<b>Conduct a pro-active and open facilities planning process</b> that informs and involves citizens in planning and decision making.	3.63
8	<b>Assure an equitable distribution of costs</b> for any new facilities between current ratepayers and new development.	3.67
9	Establish an organizational structure to build and operate the region's future facilities effectively and efficiently, and that <b>assures equitable and accountable representation of the public.</b>	3.41
10	<b>Integrate LOTT's facilities plan with other related local issues, plans and infrastructure programs</b> to maximize regional cooperation and avoid duplication of effort and cost.	3.75
* Average rating includes the total of ratings (1, 2, 3, or 4, with 1 being "Not At All Important" and 4 being "Very Important") divided by the number of responses for each item. See Appendix B.		



## ***Perceived Quality and Health of Marine Waters***

A clear majority of participants in these interviews thought marine waters at the southern end of Puget Sound were of poor quality. One even characterized it as “dying,” while others described the marine waters in the inlet as: “in trouble,” “not as healthy as it should be,” “not meeting standards,” “adequate,” “relatively healthy,” “improving,” and “clean.” Several advised against eating filter feeders from the bay or wading in the water, although there were a few individuals who said they would be willing to swim there and one mentioned eating fish from that resource. But even those who described the quality as relatively healthy or not as bad as some classic examples like the Chesapeake Bay, said that “prevention of more pollutants would be good.” It was also noted that the Budd Inlet watershed is important to LOTT’s tribal partners.

With regard to LOTT’s contribution to the health of Puget Sound, most said the water quality there “was not LOTT’s fault.” Most believe the quality of the water and sediment is due to a “legacy of contamination” from industrial pollution, toxic sediments, discharges from various other agencies, urbanization, and stormwater runoff. Many are aware that there is little circulation there, and dissolved oxygen is a big problem. One participant noted that people no longer talk about cleaning up Puget Sound, but rather talk of “restoring the health of Puget Sound.” Another observed that improved communication between LOTT and other agencies or departments could help the situation.

Most observed that LOTT discharges cleaner effluent than most dischargers on the bay. Some others asked if consideration has been given to potential solutions to the problem, such as putting the outfall pipe out further into the main tidal channel or timing the discharge of releases with the outgoing tides, which they understood to be a strategy implemented in Pierce and King Counties.

## ***Perceived Quality and Health of Fresh Waters***

### **Rivers and Lakes**

Interview participants had varied views of water quality and health of fresh water sources. Generally, participants perceived rivers to be healthier than lakes. Many of those interviewed thought that lakes were more stagnant than rivers in the area. Lakes were seen as impacted by agricultural and other types of runoff, septic systems, and surrounding development. Some mentioned high nitrates or nitrogen in lakes and algal blooms were seen as evidence of poor health of these water bodies. The health of area rivers, on the other hand, is seen more along a range from high quality, very good (especially if they are fast moving), dependent on the specific river and its situation, to degraded.

Some specific comments included:

- I am not a scientist and can’t test water, but I think lakes are less than good as they are surrounded by development and drains from the neighborhood go into them.
- It is really case specific.
- The health is going in the wrong direction, but this is a way bigger issue than LOTT’s contributions; however, LOTT is one piece of a bigger pie.

- LOTT's water is cleaner than some of the rivers it would go into – there is a lot of stormwater impact.
- Climate change and warmer weather contribute to this situation.
- There are real trouble spots because of septic system leaks.
- I have heard that some lakes are unsafe for swimming. I believe some lakes have been closed recently. I know Capitol Lake has been closed because of the New Zealand slug.
- I would “recreate” in the Deschutes more likely than Puget Sound.
- These are highly valuable resources.
- Developed areas are having an impact; the health is pretty good in less developed areas. It appears there is a “disconnect” between policy development and what is actually happening since development is allowed near sensitive habitat areas.
- They are very clean – I go fishing and never think twice about the quality of the water.

### Groundwater

In contrast to what participants think about other water sources in the area (both marine and freshwater sources), most of the interview participants thought that groundwater quality is good or very good. Even the few who said they did not know what the quality is, added:

- Since this is where we get our drinking water, it better be good.
- It is important to maintain the high quality since this is our sole source of drinking water.
- While it is good at this time, it needs to be protected.

There were some participants who said that groundwater is deteriorating, unsafe, losing ground, or has specific problem areas. These individuals commented on:

- Past practices that may have impacted groundwater such as Olympia Cheese, strawberry fields that may have introduced pesticides into groundwater, and impacts from septic systems that increased nitrates.
- Need for testing and monitoring requirements for individual wells similar to that for community wells.
- Recent examples of contamination such as from a dry cleaner in Tumwater
- Historical fill areas where it is assumed groundwater is not safe.
- Naturally occurring substances like arsenic that probably are in the groundwater.
- Shallow well areas that may be more impacted by surface activities.
- The fact that Lacey had to start chlorinating their water, so it must not be as good as it once was.
- Substances that get into water, such as pharmaceuticals, are not good.

So, while most think groundwater is of high quality, there are concerns both about protecting it and that it may already be in decline in some areas. And even though one participant noted that Farm Bureau members regularly test their wells and have found the water quality to be consistently good, another asked, “Are we monitoring our groundwater?” This is clearly an area that people care about and they want to make sure that groundwater quality is not degraded.

## ***Water and Sewer Service Providers***

Most interview participants get their drinking water at their home or workplace from a municipal provider. Seventeen interviewees said they are on a private well, two mentioned being on a community well, three said a publicly owned water system, two mentioned McAllister Springs, one said a water company and others either did not know, responded “other,” or did not respond at all.

Several comments were made regarding the taste of municipal drinking water including:

- I don’t drink tap water because of its taste.
- Lacey provides water at my workplace and I do drink tap water there, although there is a chlorine taste to it.
- There are some specific problem areas with naturally occurring nitrate, and Tumwater has had problems at a federal superfund site because of solvents.

The majority of respondents (28) identified having some type of septic system in place to handle their wastewater at home. Of the 17 respondents that identified city service as their sewer system, 15 thought they were probably LOTT customers. Some interviewees were not at all clear on what system provided their sewer service.

## ***Knowledge of Reclaimed Water Concept and Uses***

Forty-eight of the interview participants said they are familiar with the concept of reclaimed water. However, when asked to provide examples of reclaimed water use in the area, there was a wide range of responses and specific reclaimed water applications were not necessarily those in place in LOTT’s service area. For example, several people were familiar with what is being done in Yelm, and others mentioned familiarity with uses in other parts of the state or country. The reclaimed water applications mentioned included:

- Landscape irrigation (in general or specifically for parks) was the most common reclaimed water application mentioned (at least 30 times). One interviewee observed that irrigation is a good use of reclaimed water as long as the water is treated well and is low in nitrates.
- Toilet flushing was the example given ten times. Most of these mentions were associated with the usage in LOTT’s building. Some participants thought this would be a good use of reclaimed water and were not certain if it was available for widespread use.
- Golf course irrigation was the next most commonly mentioned use and was universally favored by those who mentioned it. However, there was some confusion about whether the Tumwater golf course was already using reclaimed water for irrigation or whether that was still in the planning phase. It is noteworthy that everyone who mentioned it thought this was a great use of reclaimed water.
- Industrial applications were identified six times, but those who mentioned this were not sure if industrial uses actually already existed. Regardless, individuals who mentioned it thought this would be a good use of reclaimed water.
- Infiltration basins (general concept) were mentioned six times.
- Hawks Prairie was specifically cited as a reclaimed water application site three times.

- Other uses included: fountains (two mentions), washdown water at the Port (two mentions, although it was not clear if this is an actual use or if the interviewees think it should be a way to use reclaimed water), a specific plant/location (Martin Way mentioned twice and Woodland Creek augmentation, once), and field irrigation or use by dairy farms, which were each mentioned once.

Several people offered what they thought would be good uses of reclaimed water including for crops/agriculture, car washing, heating and cooling water, washing heavy equipment, more uses at the Port, and swimming pools. One individual said reclaimed water had been considered for Capitol Lake, but thought this was a very bad idea. Another asked if it would be possible to stop all reclaimed water use until the results of the Study are known. But at least one person said he thought reclaimed water would probably be good enough to be drinking water. And one said “water is water as long as it is treated correctly.” Another, however, expressed the opinion that reclaimed water use would be good if LOTT was not repeatedly inundating one piece of land. If they were to concentrate a lot of reclaimed water use in one place or in one specific watershed, that would be a problem. One additional comment was that it was still important to look at ways to use grey water sources. Another suggested LOTT could learn from Australia and their emphasis on individual catchments that hold rainwater and other water sources for later uses such as irrigation.

#### Perceived Benefits from Reclaimed Water

Thirty-nine interviewees said they thought there were benefits to reclaimed water use in this area. Three specifically said they were not sure. Related comments included:

- There are benefits, but it is important to understand there is fear and concern among people about whether reclaimed water is safe.
- Reclaimed water has its place, but it is secondary treated sewage filtered through sand and is not adequate for drinking water.
- Irrigation is relatively unimportant, but we can reduce potable water usage somewhat this way.
- What is the issue we are trying to address by using reclaimed water? Total maximum daily load? Water shortages?
- Reclaimed water is the answer for the future to meet urban growth projections.
- It is not as important as reducing water use, but it must be carefully managed and is not for everything.
- Budd Inlet can only handle a specific amount of discharge.
- Water is growing scarcer and this is one way to save our groundwater.

#### Most Important Benefits

By far the most mentioned benefit was saving groundwater by using reclaimed water for irrigation – this was stated, in some fashion, more than 22 times. Coupled with the concept of saving water and conserving resources was saving energy by avoiding the need to pump groundwater for non-potable uses such as irrigation. However, at least one person saw the connection between reclaimed water use and water conservation as being very limited. There

were mentions from a few participants about the importance of reclaimed water as drought protection for the area. Another individual noted there are water shortages in the Olympia area from time to time. But a greater number questioned whether reclaimed water would be a real benefit as drought is very rare in the area. Recharging groundwater was mentioned as a benefit at least four times and industrial uses, three times. Augmenting stream flow, improving wetlands, forest land spreading, cooling water for dairy operations, mitigating climate change impacts, reducing pressure on the drinking water system, irrigating golf courses, and reducing discharges to Budd Inlet were also current or potential benefits identified as being important.

Some were more cautious, however, and offered the following observations:

- Reclaimed water should be used for applications that are acceptable to most people.
- If reclaimed water were cleaned to drinking water standards, it might be a benefit – but at what cost and what would the net benefit be?
- If LOTT can show with certainty the introduction of highly treated wastewater to groundwater basins is without adverse public health effects, they should go full speed ahead – but they may not be sure of this and that might be why they are doing the Study.
- LOTT should maximize the non-potable applications before putting this water into the ground.
- I am not persuaded by the “long-term resource” message on the public values sheet.

Still others observed that:

- Wasting water is not an option – there may be water wars in the future (like there are over oil today).
- We need more environmental sustainability and getting more out of the water we use, even with the upfront investment required, could provide an economic benefit.

### Concerns about Reclaimed Water Use

About half of those interviewed said they had no concerns (21 people) or were not concerned about traditional reclaimed water use for irrigation (4 people). But even among some who had no concerns about irrigation, there was an underlying question about groundwater infiltration (even though that was not the question at hand at this point in the interview). This can be summed up by one participant: “I would want to be very sure it won’t damage groundwater though. And can you reach a level of treatment and certainty that it isn’t doing any damage for an acceptable cost? What are the alternatives?” Other individuals who had no concerns went on to say that we need to address the questions people may have and consider the cost of what is being done. Another spoke about the value of buffers and greenbelts to aid in the natural treatment of reclaimed water as it seeps into the ground.

There were a number of specific questions or statements about reclaimed water posed by interviewees, including:

- Is it doing any harm?
- What are the effects on humans of some of the substances that remain in reclaimed water?

- Is reclaimed water tested for pharmaceuticals and estrogen?
- How can we make sure the area population is not consuming harmful compounds?
- I am concerned about the basic safety of the water.
- I recently heard an NPR story about “superbugs” and I am afraid our treatment process is producing these.
- I am concerned reclaimed water would not be as clean as it should be.
- I have concerns about inadequate filtration or testing, pollution of our drinking water supply, and whether staff will have an incentive to find any problems.
- I want assurance it is treated to remove contaminants of concern.
- I would not have any concerns if I had confidence in the treatment process and monitoring system in place. We need testing and monitoring, adaptive management to address any problems that arise, and good oversight and quality control built into the monitoring system.
- If it is used to irrigate near a community well, is it possible to contaminate the well?
- I think we need to provide an easy-to-understand explanation to the public about the cost to treat the water to a specific level and the associated unintended consequences that may occur at that treatment level.
- What happens if the water doesn’t get treated properly?

### ***Groundwater Infiltration/Recharge: Familiarity with Concept***

Most of the interview participants said they were familiar with the concept of groundwater infiltration, although at least three of those said they only knew what that meant and no more. At least ten interviewees said they were not familiar with the concept.

### **Opinions or Concerns about Groundwater Infiltration/Recharge**

Opinions of groundwater infiltration varied from those who are completely supportive of it to those who are totally opposed to it. But there are some common concerns among almost all of the participants:

- Protection of drinking water aquifers was on the minds of most people and these comments capture the concerns: “We are a groundwater drinking community – I want to protect as well as recharge our groundwater.” “If you ruin the aquifer, where will you get water to drink?” “It is a very good idea, but would this compromise the quality of our groundwater?”
- Similarly, several people made a point of mentioning their concern about the potential impacts to private wells from groundwater infiltration.
- There was not a clear understanding of the need to do groundwater infiltration as captured in these comments: “Is the groundwater level declining here?” “There is no rational reason to do this in Western Washington. We should not take a Texas solution and impose it in Washington where the need is not supported.” Another said, “I don’t see a huge value in recharge with wastewater, although I do see value in reusing it.”
- Volume of the water being used for recharge was also identified as a concern with overloading specific basins.
- Related concerns include the preference for surface spreading and slow infiltration into

the ground instead of direct injection. One individual mentioned LOTT might consider spreading reclaimed water in forested areas where the root systems of trees would help clean the water further.

- The quality and type of soils were also mentioned as a concern. The question is whether some soils allow the water to percolate better than other soils, and the opinions expressed were that the soil types and quality varies widely in the area. The slope of the land where reclaimed water would be spread was one concern expressed with regard to the potential for landslides. One individual was concerned about soil damage, as well as groundwater contamination if we can't filter everything out of the water. Another suggested that you need to research the geology and soils before you recharge.
- Various substances were mentioned as being of particular concern and the question was, "can soil really take out all of these things, especially in the 'latest generation of pollutants'?" Specifically mentioned were chemicals, heavy metals, toxins, hormones, and pharmaceuticals with the question being, "how good a job can LOTT's treatment process do of taking these things out of the water?" Another mentioned the potential for compounds to recombine in such a way as to be a greater danger to human and environmental health.
- Several people mentioned that it might be a good idea to treat the water to an even higher level, both as a way of protecting groundwater, as well as a way to reduce the total maximum daily load (TMDL) in effluent and allow for increased discharges to Budd Inlet. Also, it was noted by one person that while wastewater treatment plants do remove a lot of contaminants, it appears there is evidence that fish are being impacted.
- There were concerns expressed with regard to a fail-safe process and monitoring, oversight and quality control: "Once this is in the ground, there is no shut-off valve. So you must have a very good monitoring system. It should be state of the art."

### ***Awareness of Issues Regarding Compounds in Water, Wastewater, or Reclaimed Water***

All but two people interviewed said they recalled seeing or hearing 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. When asked to elaborate on what they had heard and where they heard or saw the information, print and broadcast media articles were the most common sources. Several individuals had heard about these compounds as a result of reading material at their workplace, a particular interest such as the environment, or professional and technical journals. Other sources of information include:

- Discussions at the Thurston County Critical Areas Ordinance meeting
- University of Washington
- National Oceanic and Atmospheric Administration (NOAA)
- People for Puget Sound, Citizens for Puget Sound
- Quarterly publications from King County and other cities
- Local activists
- Department of Ecology information

- LOTT representatives related to using chemical-free body care products
- General government information related to discarding unused medication
- Community meetings
- Websites
- Envirotalk listserv
- Environmental Working Group

The types of information that people have heard were widely varied, but it seems that concerns begin to arise as people read information or hear about these compounds in some other way. As one interviewee put it: “Once you contaminate the groundwater, that is it.” The persistence of trace chemicals and compounds in reclaimed water made some question whether the water was treated properly. For others, it raised questions about whether certain substances like pharmaceuticals and estrogens can be removed from water at all. Others made distinctions between the need to address pollutants from parking lots and other paved surfaces that are carried in stormwater, and those – such as medications – that end up in the treatment plant. Another takeaway for some was that it is difficult to find laboratories to test for these pollutants, or that testing for these compounds was not required and no standards have been established. For others, it appears that we are only just learning how big the problem is and the extent of human health impacts is largely unknown – so they wonder if we can use this water and feel safe.

#### Concerns about Compounds in Water, Wastewater, or Reclaimed Water

When asked if the compounds identified in the previous question were of concern to them, 12 interviewees said no, 26 said yes, and the remaining interviewees didn’t specifically answer, but expressed a range of opinions and concerns. One said “I would be concerned if we were putting this water into our groundwater basins.” Another observed that the multiplying effect was a concern, “When we all use/excrete these compounds, there is a greater cost to clean up the water and there are effects beyond the cost: impacts on fish, potential impacts on humans, and the cost of what we can’t do because we are paying for all this clean up.”

Several people mentioned discarding medications and noted that it is difficult to monitor whether people discard them correctly. The sentiment is that it is good to educate people and keep these out of the waste stream in the first place. Clearly pharmaceuticals, heavy metals, endocrine disruptors, and chemotherapy drugs were of highest concern, although other substances were mentioned. Another person pointed out that animals may also excrete various pharmaceuticals.

Most interviewees were concerned about human health, impacts to fish population, and environmental impacts and noted that it was difficult to separate the three as they are all part of the whole. While human health was top-of-mind for many, one person said “humans can’t survive without a healthful quality of the total environment” and noted this seems to be a particular ethic in Washington. Several people observed that there needs to be a comprehensive, fact-based education program, so that the risks and benefits are clearly understood by members of the public. In addition, it was suggested that there needs to be a stronger emphasis on personal



responsibility of all residents with regard to the cost and impacts of personal behavior, as well as available information about safe ways to dispose of unused medication.

The potential impacts on human health, as well as on genetics and reproduction led one participant to suggest groundwater infiltration might be premature before the Study is completed because “you should know what you are doing before doing it.”

### ***Important Questions the Study Should Answer***

Recurring responses can be broken down into the following main areas:

**What’s in the reclaimed water now?** A majority of those interviewed, whether they were concerned with the idea of groundwater infiltration or not, questioned what is in the wastewater when it goes into the treatment plant and what remains after treatment.

- Are we really finding these ‘Compounds of Potential Concern?’
- Do the compounds ever go away? The Study should look at the fate and transport of various compounds.
- What are the cumulative impacts of the compounds?
- What levels of these substances are considered safe?

Numerous individuals discussed the need to establish a baseline of existing conditions. One respondent went further to say, “Why focus only on treated wastewater if we might find the same substances in drinking water if it were routinely tested?” Another said, “I don’t think a study will solve anything politically, but it will make people anxious in fundamental ways. This could be a national research project for the next 20 years.”

**Soils.** The variety of soil types throughout the region, and their capacity to handle “concentrated” exposure to reclaimed water was mentioned by many interview participants – saturation limit, true dilution attained, etc. A long-term study of area soil’s capacity to handle and filter reclaimed water was recommended. One interviewee suggested analyzing “if there are specific recharge zones where there is a layer of filtration that is cost effective and removes more compounds.” Another suggested the Study answer, for each soil type separately: “What are the impurities in effluent and what remains after natural filtration, what are human and environmental health effects of the remaining impurities, and is there a saturation point where soil is less effective at filtering?”

**Travel time/distance.** Impact to wells from recharge areas was identified as an important area for study. One participant said that it would be helpful to have comparable data from shallow groundwater with septic tanks in the area. Although some of those interviewed believed that septic systems are better than centralized wastewater treatment, as noted in this statement: “The sewage treatment process uses more water and energy than properly maintained, functioning septic systems.”

**What's been studied before here or in other areas?** Many of those interviewed want to ensure that LOTT is learning from what has already been done, by conducting thorough literature reviews, working with specialists, and examining studies and lessons learned. As one individual said, "I am hesitant to have our local utility reinvent the wheel."

**Science-based and objective.** Similarly, interview participants want to be assured that accepted scientific practices are being used to design and implement the Study and that objectivity is a fundamental component. Among some interviewees, there was a general lack of confidence in any study that is funded by one organization.

**Cost and need?** This issue of cost and value was raised by numerous interviewees:

- Do we need this?
- Do our groundwater basins need to be recharged?
- What are the results of a cost/benefit analysis?
- What is the cost to remove compounds of potential concern and can we afford it, especially is there is only a "possible" health impact?
- Would it be better to find non-potable uses for this reclaimed water?
- Establishing a long-term funding mechanism now will be key to moving forward."

**Alternatives.** Interview participants want to see more information about alternatives:

- Is it better to discharge to the bay than to infiltrate slowly?
- Is it better to rely on septic systems than to have these concentrated areas of recharge using reclaimed water?
- Is the current LOTT path for recharge still the right choice? Are there different methods for recharge that can be cost effective and alleviate public concerns?
- Should we stop recharging until the Study is completed and we know more?

**Impacts to groundwater?** As mentioned previously, protection of groundwater resources was a priority for nearly all interviewees. Numerous interviewees want the Study to glean as much information as possible about potential consequences of recharge with the belief that "undoing" any damage to groundwater basins will be difficult and costly, if not impossible, at a later date. For one participant, the overriding question the Study should answer is: "Can we use reclaimed water to infiltrate without degrading the quality of groundwater?"

**Current path forward.** One person asked for data on whether the current process is working as it should be. "If it can't be supported, say so." Others questioned whether the water should be cleaned to an even higher standard to reduce potential environmental impacts or to allow increased discharge into Budd Inlet.

**Importance of ongoing testing and monitoring.** Some interview participants stressed the need for testing and monitoring to be conducted regularly. They observed that many private wells are not tested and some are contaminated. Others asked about the quality of wastewater and whether

current pre-treatment requirements are sufficient to ensure there is no contamination of the groundwater after recharge.

**Recharge methodology?** Some interviewees asked how reclaimed water would be introduced. “I would rather see wetlands construction – the sun helps clean the water. But pumping it straight into the ground is not good.” “If we do this artificially, is there going to be an impact?” Not all those interviewed understood that LOTT proposes to use infiltration into groundwater basins as opposed to direct injection of reclaimed water into aquifers.

**General Comments.** One interviewee commented, “Don’t make the public ask the hard questions.” In other words, the Study should be thorough and should address the concerns that have been mentioned by members of the Community Advisory Group and those individuals who have been interviewed as part of the research process, as well as questions that will be raised during community meetings as part of the Study scoping process.

### ***Trusted Sources for Reliable Information***

Customers were split on trusted sources for information regarding water quality, reclaimed water, wastewater treatment, or groundwater recharge. Twenty-one individuals expressed a great level of trust in the information LOTT provides, as well as in the LOTT staff, and acknowledged their “public and transparent policies.” The next largest trusted group (mentioned 14 times) included either independent third-parties with no affiliation to LOTT, or the Department of Ecology. At the very least, those interviewed recommended that LOTT’s research be peer-reviewed to increase the credibility of its reports. The State Department of Health was mentioned eight times, as were scientists (as a general category and in specific disciplines within the category of science, such as geologists, hydrologists and ecologists). Academic institutions and the category of “environmental groups” had the next largest number of mentions (six), followed by the U.S. Environmental Protection Agency, which was mentioned five times. Some pointed at local sources such as county departments (i.e. Environmental Health), and local city staff and elected officials as trusted sources. A few community-based organizations including South Sound Green and People for Puget Sound were also specifically identified.

### ***Current Sources of Information Regarding Water Quality, Reclaimed Water, Wastewater Treatment, or Groundwater Recharge***

A large number of interview participants mentioned information received from LOTT as their major source of information for water and wastewater issues. They identified the LOTT website, newsletters, the WET Science Center and staff as direct sources of this information. The newspaper and online resources were mentioned almost exactly as often as LOTT as a current source of information. Another source for several people was environmental and agriculture journals and magazines, trade association publications, and technical papers. Some cited their places of work as sources of information via staff briefings and informational materials available at the office. Others pointed to their community networks and organizations as an informational source, indicating that they have obtained details regarding related water and wastewater issues from fellow community members and at community meetings. A few individuals reported

reviewing reports from government agencies including the state Department of Ecology and both the state and county health departments. Television and radio were only mentioned by three individuals as information sources on these topics.

### ***Ways to Engage the Public***

When asked to provide suggestions on how to engage the public in the various phases of the Study, there were many good ideas from interview participants. The following is a summary of the suggested activities and general advice from interviewees about implementing those activities:

- Community meetings, open houses, forums, workshops or a symposium – This type of public activity was mentioned the most often. Within this general category, participants elaborated on how they saw this type of involvement being conducted.
  - Meetings should be frequent, held on different days of the week and at different times of day to make it easy for people to attend and participate.
  - Meetings should be well advertised, as well as open and transparent.
  - While one or two large events would be okay, it might be more effective to hold smaller meetings in each of the partner cities and the county.
  - Meetings should be held with relative frequency during the study process rather than waiting until the Study is complete.
  - Guest speakers on specific topics might draw a more interested audience.
  - The content for meetings might include cost and benefit analysis, scientific analysis, or presentations from LOTT staff.
  - Conversation among attendees and presenters should be encouraged. “Listen to ideas people have, not how well they present those ideas.”
  - A town meeting format with a question and answer period would be effective provided there is a strong moderator. “Unstructured debate is unhelpful. You need to structure a good process.”
  - Have several meetings with “listening posts” before holding a public hearing.
  - An open house with information stations so people can talk one-on-one with those conducting the Study and LOTT staff could be effective.
  - Opportunities to televise meetings and presentations should be identified.
- Reach out to various specific audiences with meetings, informational materials and more:
  - Hold meetings with the local scientific community, academia, physicians, science teachers, agricultural community (maybe through the Conservation District), homeowners’ associations, and neighborhood associations.
  - Meet with local, regional planning councils to inform them about the Scientific Study.
  - Include youth in the outreach through such formats as YouTube and other social media platforms.

- Increase the number of school groups taking facility tours and provide information to school children that they can share with their parents.
  - Continue to hold one-on-one meetings with community leaders.
  - Work with organizations like builders, League of Women Voters, environmental groups, and others to provide information to their membership either through publishing articles in external organizational newsletters or making presentations to or sponsoring joint forums with these groups.
  - Reach out and talk to people directly in a “coffee shop-type setting” and build rapport. “Agencies don’t often take the time to network and build relationships, but that is the best way to really inform people.”
- Media outreach should be part of the process, whether it is working with print or broadcast media or increasing the use of social media:
    - Work with reporters at the Olympian to cover events and the Study’s progress.
    - Seek opportunities to present information through radio, especially NPR.
    - Look at other media outlets such as the Business Examiner, Green Pages, Thurston County TV, or Senior News to disseminate information about reclaimed water and the Study progress.
    - Provide ways that community members can participate online through surveys and get information about reclaimed water and the Study from blogs, Facebook, YouTube, Twitter, or electronic newsletters and updates that LOTT writes and distributes to interested parties.
    - Consider placing advertisements in newspapers, inviting community members to meetings, or providing information about the Study. A series of ads that explain reclaimed water use and discuss the Study process might be helpful.
- Develop informational materials. Make sure all information is easy-to-understand and educational.
    - Write articles about the Study and related issues.
    - Develop a quarterly newsletter and send it out electronically (but make it easy for people to unsubscribe if they want).
    - Send out periodic electronic updates about the Study.
    - Consider a direct mail piece.
- Work with partners, community organizations or community gathering places like the fair to provide a way to inform the community about reclaimed water, groundwater infiltration, or the Study:

- There are many existing community or county-wide events that draw large audiences. Rather than holding entirely separate events and asking people to go to one more place, work with LOTT partner agencies to have an exhibit or participate in some other meaningful way in already scheduled events, as well as distribute informational materials and provide an opportunity for people to sign up to receive electronic updates.
- Exhibit at busy places like malls or specific stores to make it easy for people to stop and get information.
- Participate in events like “Street of Dreams” to showcase dual plumbing and reclaimed water use.
- Seek placement of articles in newsletters of external organizations such as Audubon, the County newsletter Splash, Thurston Talks (online) or Talking Trash, and the League of Women Voters newsletter for example. Also consider church bulletins and HOA newsletters.

Additional suggestions that could be applied to any of the public involvement activities mentioned by interview participants included:

- LOTT needs to make the WET Center noticeable as people don’t always see it.
- The more information that is put on the Web, the more open the process feels.
- Evening meetings can be tough for parents to attend.
- Look at this issue in the broader context of future sustainability; conduct a series of educational programs and put them on community access television.
- Participate in family-oriented events and have an exhibit booth with activities and information that will also interest children; ask people questions and tell them how to get involved.
- Contact opponents and give them a chance to tell LOTT what worries them about either reclaimed water use or groundwater infiltration.
- Use the same process the State developed for comprehensive plan development.
- Give people a benchmark – the average person is going to say "I want to see none of this stuff in my water." LOTT needs to manage expectations, because additional treatment could be more expensive and still not provide all the answers.
- The Study needs to talk about consequences – we need to know about benefits and costs of either doing or not doing a specific thing.
- LOTT’s commitment not to contaminate needs to be emphasized.
- Don’t use technical jargon at meetings or in informational materials.

### ***Additional Comments***

Not all interview participants wanted to add additional comments about LOTT, reclaimed water or groundwater recharge. Those who did comment reiterated previous observations or underscored areas they believed to be critically important. The key topic areas mentioned were:

- *Consistent and sustained involvement program:* Some of the recent misunderstandings that have been expressed may be the result of a lack of information provided by LOTT in recent years. Make sure the involvement and awareness programs are continual and not “stop and start” programs.
- *Risk assessment:* The costs of purifying water needs to be compared against the risk that would be reduced with different levels of purification. There should be an understandable discussion of relative risk in the Study. “Be frank and candid about what we don’t know.”
- *Cost/benefit analysis:* LOTT needs to consider the cost implications of any alternative, including impacts to future generations and current residents on fixed incomes. Include costs of alternatives: “If we don’t do reclaimed water, then...”
- *Build strategic partnerships:* Partnerships with both urban and rural residents, the agricultural community, and throughout the county will help build trust and understanding about what LOTT is doing or proposing to do with reclaimed water.
- *Educational materials:* Develop educational materials that identify what residents and businesses in the county can do to minimize pollution and distribute it widely. LOTT has distributed information in the past about using chemicals and pesticides; this is a good idea.
- *Involve the younger generation:* Consider ways to have students be part of the Study process.
- *Identify options:* What treatment options will help alleviate community concerns about human, fish and environmental health impacts? “Don’t reinvent the wheel.” Draw on experiences in other areas in the state.
- *Peer review is critical:* “If you want people to believe the Study,” peer review is a critical component.
- *Growth impacts:* Growth impacts should be a part of this discussion. LOTT should not have to “make California-style growth possible.”
- *Open process:* Make sure to listen to everyone who comments, including “outliers” – don’t just discount their ideas.
- *Climate change:* It is important to consider climate change impacts when planning for future alternatives. Sustainable practices are necessary for our future.
- *Groundwater basin protection:* Again, a bottom line for almost everyone interviewed is protecting groundwater quality. As one individual stated: “If groundwater is compromised, we’re sunk.” Look at reclaimed water as more than a resource that can produce funding – “public health and safety should be the top priority.”

# **APPENDICES**



# ***Appendix A***

## **A. *Individuals Interviewed***

The following list of individuals interviewed may include an organization or interest group with which they are associated; however, interview participants did not express or officially represent an opinion of that group or organization. Positions on any of the issues in the questionnaire were not sought by LOTT nor by the interviewer.

Robert Bergquist	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 former TESC Professor
Stephen Buxbaum	Mayor, City of Olympia
Michael Cade	Economic Development Council
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 Mgr, Deschutes TMDL Advisory, Clamp Focus Group, TC Solid Waste Advisory, Volunteer Fireman, Scouts, PTA, Service Groups
John Dodge	The Olympian
Al Ewing	EPA Water Quality Planning, Homeowner's Association
Jenna Glock	Science Teacher (Middle School), Parent, County Resident
Jon Halvorson	Former Lacey Council Member, Kiwanis
Jennifer Holderman	Grants and Loans Mgr, Ecology, Former Teacher, Water Quality, Reuse, Watershed Council, Rotary
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	President, Black Hills Audubon Society

Steve Kalinowski	Fish and Wildlife
Pete Kmet	Mayor, City of Tumwater
Don Lange	Wastewater Plant Operator and Manager, Small Community Water System Customer, Lives Near Hawks Prairie Ponds
Glen Morgan	Stop Thurston County
Jane Mountjoy-Venning	Thurston County Environmental Health
Dan O'Neil	Large ranch agricultural operation along Deschutes River
Linda Oosterman	Thurston Public Utility District Commissioner
Dave Peeler	Board Of Deschutes Estuary Team, People For Puget Sound, Kiwanis, Neighborhood Association, former Ecology
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 and Albany Coate	Enterprise For Equity and Student
Richard E Swanson	Civil Engineer, Traffic And Transportation, Private Well Owner, Faith Community Volunteer
Jeff Swotek	NRCS/USDA - agricultural community
Janine Unsoeld	SPEECH, Green Pages, Blogger
Arthur Vaeni	Interfaith Works
Karen Valenzuela	Thurston County Board of Commissioners
Sally Vogel	Chair Of Panorama Green Team
Kathleen Whalen	Thurston Conservation District
Angela White	Olympia Master Builders
Brian Wilson	Downtown Liaison, Business & Social Connections
Bryan Wilson	Former SWAB Member
Lance Winecka	South Puget Sound Salmon Enhancement Group
Lon Wyrick	Thurston Regional Planning Council
Dr. Diana Yu	Thurston County Health Officer

# ***Appendix B***

## **B. Interview Discussion Guide**

*Opening introduction should indicate that this interview is to help the LOTT Clean Water Alliance as it begins a large-scale regional study.*

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?
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 5, with 1 being not at all important and 5 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
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?
11. Do you believe there are benefits to reclaimed water use in this area? If so, what 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?

## Rating Public Values for LOTT

Please rate the following public values based on the level of importance you feel for each one.

Use a scale from one to four where one is not at all important and four is very important, circling your answer.

Public Value	Not At All Important	Somewhat Unimportant	Somewhat Important	Very Important	Don't Know Cannot Rate
As a first priority, <b>maximize utilization of LOTT's existing treatment capacity.</b> Manage demand to avoid or delay the need for new treatment capacity.	1	2	3	4	5
Prepare a plan that <b>meets current and future wastewater needs</b> throughout the LOTT service area. Accommodate planned growth, consistent with LOTT's legal requirements.	1	2	3	4	5
Select wastewater facilities for the region's future that yield <b>maximum benefits to the environment.</b> Mitigate any potentially adverse impacts of new facilities.	1	2	3	4	5
Take all possible steps to <b>control facilities costs.</b> Carefully consider the lowest cost and most cost-effective alternatives, and evaluate the impact on LOTT ratepayers.	1	2	3	4	5
<b>Treasure LOTT's treated wastewater as a valuable, long-term resource</b> to be cleaned and restored, reused, then ultimately returned to the environment.	1	2	3	4	5
Clearly define, demonstrate and document the value to the community of new facilities needed for the future. Design any new LOTT facilities to <b>produce multiple benefits for the community.</b>	1	2	3	4	5
<b>Conduct a pro-active and open facilities planning process</b> that informs and involves citizens in planning and decision making.	1	2	3	4	5
<b>Assure an equitable distribution of costs</b> for any new facilities between current ratepayers and new development.	1	2	3	4	5
Establish an organizational structure to build and operate the region's future facilities effectively and efficiently, and that <b>assures equitable and accountable representation of the public.</b>	1	2	3	4	5
<b>Integrate LOTT's facilities plan with other related local issues, plans and infrastructure programs</b> to maximize regional cooperation and avoid duplication of effort and cost.	1	2	3	4	5

Add any other suggested values here or on the reverse...

# ***Appendix C***



### **C. *Suggestions for Future One-on-One Interviews***

Interview participants were asked whether they would suggest any other person or organization that LOTT staff or the Study team should talk with about issues related to reclaimed water and groundwater infiltration if additional interviews were conducted in the future. It should be noted that participants were not told who else was interviewed, so many of the suggested interest groups and individuals were, in fact, interviewed as part of this effort. Following are the suggested individuals, agencies, organizations or interest group categories:

#### **Individuals**

- Harry Branch, an environmentalist
- John Daly
- Jeff Dickison (Squaxin Island Tribe; works on Deschutes project)
- Rick Forstheler (former sewer commissioner)
- Ed Kilduff (hydrogeologist)
- Jim Lazar (very analytical)
- Connie Lorenz (Olympia Downtown Association)
- Bruce Morgan (citizens advisory committee for Scatter Creek)
- Nadine Romero (Thurston County, groundwater)
- Doug Rushton (Conservation Board)
- Krag Unsoeld
- Allan Wald
- Linton Wildrick (Pacific Groundwater Group)
- Greg Zentner (manages municipal operations unit in Department of Ecology)

#### **Agencies, Organizations or Groups**

- Black Hills Audubon
- Brown and Caldwell
- Capitol Land Trust
- Department of Ecology, especially at the staff level
- DERT (Deschutes Estuary Restoration Team)
- EDC board members
- Friends of the Waterfront
- FutureWise
- GREEN (Global Rivers Environmental Education Network)
- Joint Base Lewis-McChord
- League of Conservation Voters
- Nisqually Land Trust
- Northern Thurston and Olympia School District Superintendents (both are very thoughtful)
- NW Eco Builders Guild

- Olympia Downtown Association
- Olympia, Lacey, Tumwater Visitor and Convention Bureau, Executive Director of
- People for Puget Sound
- Port of Olympia
- REI
- Rotary Clubs
- Capitol Lake Improvement and Protection Association (Savecapitollake.org)
- Sierra Club
- SPSEC (Mike Leigh)
- St. Martin's Civil Engineering Program
- St. Martin's technical groups or academics
- St. Peter Hospital
- Take the Dam Out
- Tenino (some recharge areas near them)
- The Evergreen State College, Director of Master of Environmental Studies program and other Evergreen faculty
- Thurston City Medical Association
- Thurston Conservation Voters
- Thurston County Agricultural Advisory Committee
- Thurston County Farm Bureau
- Thurston County Progressive Network (TC Pronet)
- Thurston County Public Health and Social Services, Environmental Health Division (Art Starry, Director)
- U.S. Department of Agriculture
- U.S. Department of Homeland Security (protecting water resources)
- U.S. Geological Survey (Tacoma office)
- University of Washington Public Health Department
- Washington Hydrological Society
- Washington Public Interest Research Group (WASHPIRG)
- Washington Toxics Coalition

### **Interest Group Categories**

- Agricultural community, especially dairy farmers that have been the subject of groundwater contamination work and may be opposed to this and large farmers
- Anti-fluoride campaign members
- Builders
- Chambers of commerce, business groups
- Civic organizations
- County organization for people with chemical sensitivities

- End users of water
- Farm community at the Farmers' Market
- Fate and transport scientists
- Fish cultivators and those who catch/shellfish
- Food co-op
- Health care employers (Providence, St. Pete's, Capital Medical Center, Olympia Orthopedics)
- Homeowners associations
- Hoteliers
- Land trust networks
- Manufacturers that use a lot of water, downtown manufacturers
- Military service clubs
- Municipalities that are LOTT partners
- Neighborhood associations in areas on private wells
- People living near future sites
- People who don't have a bottom line interest in the project
- PTSAs
- Realtors
- Regional planning committees (good forums)
- Retired persons
- Schools and school districts public information officers, grade and middle school educators and volunteers or day care centers
- Shellfish growers (Taylor Shellfish was mentioned by some)
- Someone involved in Olympia's community artesian wells, private well providers, well drillers
- Tenino region consortium of beef producers
- Tribes (three)
- Wastewater industries (septic tank installers, etc)