



**January 2002**

**Final Supplemental  
Environmental Impact Statement  
ADDENDUM**

**Hawks Prairie  
Reclaimed Water Project**

Prepared for:  
LOTT Wastewater Alliance

Prepared by:  
Adolfson Associates, Inc.  
in association with Brown and Caldwell



## TABLE OF CONTENTS

<b>FACT SHEET .....</b>	<b>FS-1</b>
 <b>CHAPTER ONE: BACKGROUND AND SUMMARY</b>	
1.1 Project Objective.....	1-1
1.2 Purpose and Need for the Project.....	1-1
1.3 Existing Wastewater Treatment System .....	1-2
1.3.1 Regional Wastewater System .....	1-2
1.3.2 City of Lacey.....	1-2
1.4 Planning Process/ Previous SEPA Review.....	1-2
1.5 Organizational Implementation: Finance and Governance.....	1-4
1.6 Public Input/Scoping.....	1-4
1.7 Scope of the SEIS and this addendum .....	1-4
1.8 Summary of Major SEIS Conclusions.....	1-5
1.9 Timing of Implementation .....	1-5
 <b>CHAPTER TWO: DESCRIPTION OF ALTERNATIVES</b>	
2.1 Project Proponent.....	2-1
2.2 Project Location.....	2-1
2.3 Project Objective.....	2-1
2.4 Purpose and Need for the Project.....	2-2
2.5 Alternatives Evaluation Criteria .....	2-2
2.5.1 Reclaimed Water Satellite Plant Sites Alternatives .....	2-2
2.5.2 Constructed Wetland Polishing Ponds and Groundwater Recharge Basin Sites.....	2-3
2.5.3 Use Areas .....	2-3
2.6 Alternatives.....	2-3
2.6.1 Reclaimed Water Satellite Plant Alternatives.....	2-3
2.6.2 Constructed Wetland Polishing Ponds, Groundwater Recharge Basin, and Associated Conveyance System Alternatives .....	2-5
2.6.3 Use Area Alternatives .....	2-5
2.6.4 No Action Alternative.....	2-5
2.7 Project Phasing and Schedule .....	2-5
 <b>CHAPTER THREE: AFFECTED ENVIRONMENT SITE 3</b>	
3.1 Earth Resources .....	3-1
3.2 Air Resources.....	3-1
3.3 Surface Water Resources .....	3-2
3.4 Groundwater Resources .....	3-2

3.5	Biological Resources .....	3-2
3.6	Fish Resources .....	3-3
3.7	Shellfish Resources .....	3-3
3.8	Noise Resources .....	3-3
3.9	Land and Shoreline Use .....	3-4
3.10	Parks and Recreation .....	3-4
3.11	Aesthetics and Visual Resources .....	3-5
3.12	Historic and Cultural Preservation .....	3-5
3.13	Transportation .....	3-7
3.14	Public Services and Utilities .....	3-7

#### CHAPTER FOUR: IMPACTS TO RECLAIMED WATER SATELLITE PLANT SITE 3

4.1	Impacts .....	4-1
4.1.1	Earth Resources .....	4-1
4.1.2	Air Resources .....	4-1
4.1.3	Surface Water Resources .....	4-2
4.1.4	Groundwater Resources .....	4-3
4.1.5	Biological Resources .....	4-3
4.1.6	Fish Resources .....	4-3
4.1.7	Shellfish Resources .....	4-3
4.1.8	Noise .....	4-4
4.1.9	Land and Shoreline Use .....	4-4
4.1.10	Parks and Recreation .....	4-5
4.1.11	Aesthetics and Visual Resources .....	4-5
4.1.12	Historic and Cultural Preservation .....	4-6
4.1.13	Transportation .....	4-6
4.1.14	Public Services and Utilities .....	4-7
4.2	Mitigation Measures .....	4-7
4.2.1	Earth Resources .....	4-7
4.2.2	Air Resources .....	4-7
4.2.3	Surface Water Resources .....	4-8
4.2.4	Groundwater Resources .....	4-9
4.2.5	Biological Resources .....	4-9
4.2.5	Fish Resources .....	4-9
4.2.7	Shellfish Resources .....	4-9
4.2.8	Noise .....	4-9
4.2.9	Land and Shoreline Use .....	4-10
4.2.10	Parks and Recreation .....	4-10
4.2.11	Aesthetics and Visual Resources .....	4-10
4.2.12	Historic and Cultural Preservation .....	4-10
4.2.13	Transportation .....	4-11
4.2.14	Public Services and Utilities .....	4-11
4.3	Significant Unavoidable Adverse Impacts and Cumulative Impacts .....	4-11
4.3.1	Earth Resources .....	4-12
4.3.2	Air Resources .....	4-12
4.3.3	Surface Water Resources .....	4-12

4.3.4	Groundwater Resources .....	4-12
4.3.5	Biological Resources .....	4-12
4.3.6	Fish Resources .....	4-12
4.3.7	Shellfish Resources .....	4-12
4.3.8	Noise .....	4-12
4.3.9	Land and Shoreline Use .....	4-12
4.3.10	Parks and Recreation.....	4-12
4.3.11	Aesthetics and Visual Resources .....	4-12
4.3.12	Historic and Cultural Preservation.....	4-12
4.3.13	Transportation.....	4-12
4.3.14	Public Services and Utilities .....	4-12

REFERENCES .....	R-1
------------------	-----

**LIST OF TABLES**

Table 1-1. Impacts Summary: Reclaimed Water Satellite Plant.....	1-6
Table 1-2. Mitigation Measures Summary: Reclaimed Water Satellite Plant .....	1-10
Table 3-1. Soil Types and Characteristics .....	3-1
Table 3-2. Reclaimed Water Satellite Plant Sites Existing Land Use .....	3-5

**LIST OF FIGURES**

**Follows Page**

Figure 1-1. Site 3 Proposed Pipeline Alignments.....	1-13
Figure 2-1. Conceptual 1 MGD Satellite Reclamation Plant Schematic.....	2-4
Figure 2-2. Conceptual 5 MGD Satellite Reclamation Plant Schematic .....	2-4
Figure 2-3. Property Boundaries, Site 3.....	2-4



## FACT SHEET

This Addendum to the supplemental environmental impact statement (EIS) has been prepared consistent with the State Environmental Policy Act (SEPA) WAC 197-11-620 and 625. This Addendum supplements the June 2001 Final Supplemental Environmental Impact Statement prepared to evaluate the Hawks Prairie Reclaimed Water Project. This Addendum is being prepared to address an additional site that was not included in the 2001 Supplemental EIS. Consistent with WAC 197-11-706, this Addendum is used to provide additional information that does not substantially change the analysis of significant impacts and alternatives in the existing Final Supplemental EIS.

### PROJECT TITLE

Hawks Prairie Reclaimed Water Project

### PROJECT DESCRIPTION

The LOTT (Lacey, Olympia, Tumwater, and Thurston County) Wastewater Alliance helps preserve and protect public health, the environment, and water resources by providing wastewater management services for the urbanized areas of North Thurston County. LOTT's four government partners jointly manage wastewater resources for a currently sewered area of approximately 14,000 acres and an estimated sewered population of about 80,000 people. LOTT recently completed a long-range planning process that considered a number of strategies for ensuring the provision of adequate wastewater facilities to accommodate wastewater flow increases that will accompany projected population and employment growth

within its service area. That process resulted in the development of the Wastewater Resource Management Plan (WRMP), also described as "The Highly Managed Plan."

LOTT is in the process of implementing the Highly Managed Plan, which incorporates a decentralized approach to providing new wastewater capacity through recycling. This will involve a gradual transition to reclaimed water production and use for such beneficial uses as irrigation, commercial/industrial water supply, and groundwater recharge. New treatment capacity will be added in small increments, just in time to meet the community's future wastewater needs. Small reclaimed water satellite plants will treat wastewater to Washington State Class A Reclaimed Water standards.

Providing the first increment of new capacity under the Highly Managed Plan will involve:

- Siting and construction of a reclaimed water satellite plant;
- Siting and construction of a series of constructed wetlands polishing ponds and a groundwater recharge basin;
- Identifying public and private sites, such as golf courses, parks, large green belt areas, farms, and industries, where Class A Reclaimed Water could be put to beneficial use; and
- Construction of conveyance routes and other needed conveyance facilities to connect the reclaimed water satellite plant to the constructed wetlands polishing ponds,

groundwater recharge basin, and identified users of reclaimed water.

This phase of the Highly Managed Plan will also involve establishment of the policies and institutional arrangements necessary to implement an effective reclaimed water production and use program.

## **PROJECT LOCATION**

The potential sites are located in the Hawks Prairie Resource Management Basin in northeast Thurston County. The affected areas include portions of the City of Lacey and unincorporated Thurston County.

## **PROPONENT**

LOTT Wastewater Alliance

## **LEAD AGENCY**

LOTT Wastewater Alliance  
2101 Fourth Avenue East #101  
Olympia, Washington 98506-4729  
(360) 664-2333

## **RESPONSIBLE OFFICIAL**

LOTT Environmental Review Committee  
Dennis Ritter, P.E., Presiding Member

## **CONTACT PERSON**

Karla Fowler, Program Manager  
LOTT Wastewater Alliance  
2101 Fourth Avenue East #101  
Olympia, Washington 98506-4729  
(360) 664-2333 ext. 100

## **PERMITS AND LICENSES REQUIRED**

The following permits and licenses may be required.

### **Federal:**

Section 404 Permit (Nationwide 12)

### **State:**

NPDES  
Application for Short Term Water Use  
Waste Discharge Permit – Reclaimed Water  
Order of Approval to Construct New Air  
Pollution Source (Notice of Construction)  
Hydraulic Project Approval  
401 Water Quality Certification

### **Local:**

Conditional Use/Special Use Permit  
Zoning Code Variance  
Building/Grading Permits and Drainage Review  
Right-of-Way Use  
Wetlands Development Permit  
Commercial Design Review

## **AUTHORS AND PRINCIPAL CONTRIBUTORS**

Adolfson Associates, Inc.  
5309 Shilshole Avenue NW, Suite 200  
Seattle, Washington 98107

Brown and Caldwell  
606 Columbia, Suite 217  
Olympia, Washington 98501

Larsen Anthropological and Archaeological  
Services  
7700 Pioneer Way, Suite 101  
Gig Harbor, Washington 98335

## **DATE OF ADDENDUM ISSUE**

January 29, 2002

## **FUTURE ENVIRONMENTAL REVIEW**

The Highly Managed Plan divided the north Thurston County Urban Growth Management Area (LOTT's service area) into four homogenous Resource Management Basins, small watersheds or basins with similar conditions and population characteristics. The Highly Managed Plan proposes construction and

operation of reclaimed water production and use facilities as well as other wastewater system improvements within each Resource Management Basin. The Hawks Prairie Reclaimed Water Project represents the first comprehensive implementation phase for a Resource Management Basin and for adding new treatment capacity to the LOTT system. An implementation project is being initiated for the Budd Inlet Resource Management Basin, and future projects are planned for the Chambers Prairie Resource Management Basin and the Airport/West Resource Management Basin. The cumulative impacts of the four projects are addressed in the 1998 *LOTT Wastewater Resource Management Plan and Final Supplemental Environmental Impact Statement*.

## **PURCHASE OF COPIES**

This Addendum is available on LOTT's web site ([www.lottonline.org](http://www.lottonline.org)).

Copies of the printed document are available for public review at the LOTT Alliance office; the LOTT Budd Inlet Treatment Plant; the Lacey, Olympia and Tumwater City Halls; the Thurston County Courthouse; and the Lacey, Olympia, and Tumwater Timberland Libraries. Copies of the printed document may be purchased for the duplication cost of \$6.50 per copy.

To order printed documents, contact the LOTT office at 664-2333 ext. 101.

## **CHAPTER ONE: BACKGROUND AND SUMMARY**

This Addendum has been prepared to supplement the 2001 *Hawks Prairie Reclaimed Water Project Final Supplemental Environmental Impact Statement* (referred to in this document as the *2001 Final SEIS*). A summary of the *2001 Final SEIS* has been provided for clarity. Refer to the *2001 Final SEIS* for further discussion.

### **1.1 PROJECT OBJECTIVE**

The objective of the Hawks Prairie Reclaimed Water Project is to provide the first increment of new wastewater treatment capacity, consistent with the LOTT Wastewater Resource Management Plan's Highly Managed Alternative, to accommodate projected population and employment growth within the LOTT sewer service area. Wastewater services provided through this project are intended to be consistent with adopted land use, water use, and wastewater plans, policies, and regulations; incorporate public values; and be cost effective over the long-term.

### **1.2 PURPOSE AND NEED FOR THE PROJECT**

LOTT recently completed an extensive long-range planning process to develop a program for management of projected wastewater flows that is consistent with identified public values, is technically feasible, and is in compliance with adopted policies and regulations.

The four-year planning process was the result of studies that showed the existing LOTT wastewater treatment plant could be out of capacity during high rainfall periods as early as 2001/2002. LOTT's discharge permit from the

Washington State Department of Ecology requires planning to begin when the plant reaches 85 percent of its design capacity. LOTT's four government partners – Lacey, Olympia, Tumwater and Thurston County – authorized the planning to begin when they approved an Intergovernmental Contract for Inflow and Infiltration Management and New Capacity Planning as of March 27, 1995.

The purpose and need for wastewater service improvements in the LOTT service area are more fully described in Chapter 1 of the 1996 *LOTT Wastewater Resource Management Plan Final Programmatic Environmental Impact Statement* (Final PEIS), and in Chapter 2 of the 1998 *LOTT Wastewater Resource Management Plan and Final Supplemental Environmental Impact Statement*.

The Plan provides a blueprint for management of wastewater in the urbanizing portions of Northern Thurston County through the year 2020. Under the approved Plan, also known as the "Highly Managed Plan," LOTT will incorporate a decentralized approach to providing new wastewater capacity through recycling. This will involve a gradual transition to production of reclaimed water for such beneficial uses as irrigation, commercial/industrial water supply, and groundwater recharge. New treatment capacity will be added in small increments, just in time to meet the community's future wastewater needs. The Hawks Prairie Reclaimed Water Project is intended to provide the first increment of that new capacity.

## 1.3 EXISTING WASTEWATER TREATMENT SYSTEM

The following text briefly describes the existing LOTT Alliance and the City of Lacey wastewater infrastructure in the Hawks Prairie Resource Management Basin. Refer to the *2001 Final SEIS* for further discussion.

### 1.3.1 Regional Wastewater System

The LOTT Wastewater Alliance helps to preserve and protect public health, the environment, and water resources by providing wastewater management services for the urbanized area of north Thurston County. LOTT is comprised of four government partners, the cities of Lacey, Olympia, and Tumwater, and Thurston County. The LOTT service area includes the incorporated cities of Lacey, Olympia, and Tumwater and their Urban Growth Management Areas, established pursuant to the state Growth Management Act (Chapter 36.70A RCW). The current system serves an area of approximately 14,000 acres with a sewered population of about 80,000 people.

The LOTT partners jointly manage wastewater facilities within the service area. Their joint efforts currently include operating the Budd Inlet central treatment plant and major conveyance systems, providing flow management, and conducting long-range planning. The Budd Inlet treatment plant employs physical and biological treatment processes along with ultraviolet disinfection. Recently, wastewater flows exceeded the capacity of the treatment plant during wet weather months, even with measures being taken to reduce excess stormwater and wastewater flows.

LOTT provides wastewater treatment services on a wholesale basis to its three city partner governments, who provide the retail-level sewer utility service to individual customers.

### 1.3.2 City of Lacey

The City of Lacey is the LOTT partner that is responsible for retail-level sewer service to

customers in the Hawks Prairie area. Lacey maintains a local sewage system that collects and conveys wastewater to a LOTT interceptor located near the intersection of Martin Way and Desmond Drive.

## 1.4 PLANNING PROCESS/ PREVIOUS SEPA REVIEW

The planning process started by evaluating the broad spectrum of possible wastewater management approaches, then became progressively more specific as step-by-step decisions have been made. The process emphasized environmental evaluations and incorporated engineering, planning, and scientific evaluations. Extensive input from stakeholders and other citizens throughout the service area was an integral part of the planning throughout each stage.

Planning started in September 1995 with public opinion and stakeholder surveys and interviews, resulting in a series of 10 public values.

Nine possible “Program Directions” for managing LOTT’s wastewater future were defined, representing the full range of treatment and discharge or use options available.

During 1996, the directions were evaluated through preparation of a *Programmatic Environmental Impact Statement*. It compares general environmental impacts of the nine Program Directions, without reference to specific sites.

As the result of the environmental evaluation and extensive public comment, two of the Program Directions, 6 and 7, were discontinued from further evaluation in January 1997.

In September 1996, the LOTT Advisory Committee authorized a scientific study of Budd Inlet to more fully explore the potential for increased discharge of treated water, especially during the wintertime.

Demand Management received the strongest public support and it became apparent this

needed to be part of any final solution chosen. Thus, a Combination (Program Direction 8) became the focus of the next stage of evaluation during 1997. Strongest public and stakeholder support was indicated for combining moderate levels of the first four Program Directions – Demand Management, Reclamation, Groundwater Recharge and Discharge More Into Budd Inlet. The evolving preferred program would be an environmentally-based system for adding small units of capacity, responding just-in-time to actual measured conditions. New units of capacity would be gained by recycling of wastewater through Reclamation and Groundwater Recharge methods. Transitioning to these new methods would be supported through reserve capacity in Budd Inlet (if environmentally acceptable) and Demand Management programs. On May 30, 1997 that "Combination" was formally chosen as the "Preferred Program Direction."

A new round of environmental and technical evaluations followed, comparing three alternatives:

- The preferred program, described as "The Highly Managed Alternative"
- "The Traditional Facilities Alternative," a single large treatment plant discharging into marine waters, and
- "The No Action Alternative", involving no new capital facilities to increase capacity

The alternatives were described and the probable significant adverse environmental impacts, mitigation measures, cumulative impacts, and significant unavoidable adverse impacts were evaluated and documented in the 1998 *LOTT Wastewater Resource Management Plan and Final Supplemental Environmental Impact Statement* (1998 Final SEIS). The Final SEIS expanded upon the previously prepared 1996 *Final Programmatic Environmental Impact Statement* and provided more focused evaluation of probable impacts. It also provided a general evaluation of representative sites within the planning area.

Action was taken on November 25, 1998 to submit the Proposed Plan and Final Supplemental EIS to the Department of Ecology as LOTT's response to its permit planning requirement conditions.

During 1999, the LOTT Partners took the actions required to implement financing and governance changes as the basis for implementing the Plan. LOTT connection fees and monthly rates were increased. By January 2000 all four of the LOTT Partner governments had approved the Wastewater Resource Management Plan's Highly Managed Alternative of November 1998 and an Interlocal Agreement for Wastewater Management by the LOTT Wastewater Alliance.

Implementation of the Plan will be phased:

- Demand Management, in the form of Flow Reduction Programs, was implemented in 1997.
- With findings from the Budd Inlet Scientific Study suggesting that LOTT could increase wintertime discharge in Budd Inlet without environmental harm, the LOTT Board of Directors voted in February 2001 to request a permit modification from the Department of Ecology.
- Improvements at the existing Budd Inlet Treatment Plant will include facilities to treat a portion of the flows to Reclaimed Water standards.
- The Hawks Prairie Reclaimed Water Project is being planned to implement the first increment of new Reclaimed Water and Groundwater Recharge capacity. Future increments, as outlined in the Plan, are anticipated in other parts of LOTT's service area.

In June 2001, the *Final Supplemental Environmental Impact Statement for the Hawks Prairie Reclaimed Water Project* was prepared (referred to in this Addendum as *the 2001 Final SEIS*). The *2001 Final SEIS* evaluated the environmental impacts associated with the construction and implementation of a reclaimed water satellite plant, constructed wetland

polishing ponds, groundwater recharge, associated conveyance pipelines, and the use of reclaimed water in the Hawks Prairie area of Thurston County. This Addendum is being used to provide additional environmental evaluation of a site that was not identified in the *2001 Final SEIS*. The additional information does not substantially change the analysis of significant impacts and alternatives that were presented in the *2001 Final SEIS*.

## **1.5 ORGANIZATIONAL IMPLEMENTATION: FINANCE AND GOVERNANCE**

During 1999, the LOTT Partners focused their attention on implementing the Plan provisions regarding finance and governance.

On June 21, 1999 the LOTT Partners approved an increase in connection fees (the Capacity Development Charge) to take effect July 1, 1999. The increase raised connection fees from \$882 to \$3,000 to generate the bulk of funds (88 percent) that will be used to build new facilities, plus funding for growth-related portions of system improvement projects.

In December 1999, the three LOTT Partner cities authorized an increase in the LOTT monthly rates, effective on or before December 31, 1999. The monthly rate went from \$21.00 to \$25.50 per month per equivalent residential unit. These funds will primarily support improvements to the existing system plus a small percentage (12 percent) of the new facilities.

On November 5, 1999, the LOTT Advisory Committee approved Resolution 991101 recommending that the LOTT Partner governments approve the Wastewater Resource Management Plan's Highly Managed Alternative of November 1998. The resolution further recommended approval of a new LOTT Interlocal Cooperation Act Agreement for Wastewater Management by the LOTT Wastewater Alliance to govern implementation of that Plan. By January 24, 2000, all four LOTT

Partner governments had approved the Plan and Interlocal Agreement.

Those approvals set the stage for LOTT to begin its transition from a contractual partnership to a non-profit organizational entity to be known as the LOTT Wastewater Alliance. On February 11, 2000 the LOTT Advisory Committee approved the first step in this transition – the filing of Articles of Incorporation with the Secretary of State. The Certificate of Incorporation was signed April 17, 2000. The organizational transition to the LOTT Wastewater Alliance was completed effective July 1, 2001.

## **1.6 PUBLIC INPUT/SCOPING**

Throughout the nearly four year process of developing the Wastewater Resource Management Plan, LOTT actively solicited input from key stakeholders and the public regarding the plan and its potential environmental impacts. Such input played a crucial role in shaping the plan's final outcome. LOTT will continue to encourage public involvement during implementation of the Wastewater Resource Management Plan and to provide opportunities for citizens to learn more about the plan.

Refer to the *2001 Final SEIS* for a summary of the scoping comments, and comments received on the Draft SEIS.

## **1.7 SCOPE OF THE SEIS AND THIS ADDENDUM**

The *2001 Final SEIS* evaluated alternatives for siting, construction, and operation of reclaimed water production and use facilities necessary to implement the Highly Managed Plan in the Hawks Prairie Resource Management Basin. A No Action Alternative was also evaluated. Under the No Action Alternative, the provisions of the Highly Managed Plan, as identified in the LOTT Wastewater Resource Management Plan, concerning the implementation in Hawks Prairie Resource Management Basin would not be implemented.

This Addendum will evaluate a potential reclaimed water satellite plant site that was not identified at the time of the previous analysis. The proposed new site is in the vicinity of the previously identified sites, and offers potentially lower environmental impacts in several areas because its surrounding land use is less sensitive. Figure 1-1 illustrates the new site, Site 3, relative to the previously evaluated sites.

No additional analysis of the Hawks Prairie Reclaimed Water Project is anticipated beyond this Addendum. However, future environmental review will be conducted if there are significant changes to the proposed action or if new, more detailed information regarding probable adverse environmental impacts becomes available. All subsequent environmental review will be accomplished in accordance with the State Environmental Policy Act (SEPA), and may take the form of a checklist and a Mitigated Determination of Non-Significance (MDNS), an addendum to the SEIS, or a new SEIS.

## **1.8 SUMMARY OF MAJOR SEIS CONCLUSIONS**

Tables 1-1 and 1-2 summarize the environmental impacts and mitigation measures associated with the construction and operation of a reclaimed water satellite plant. Refer to the *2001 Final SEIS* for a summary of impacts and mitigation measures associated with Constructed Wetlands Polishing Ponds, Groundwater Recharge Basins, associated conveyance pipelines, and reclaimed water use. The addition of the new site does not alter any of the major conclusions presented in the *2001 Final SEIS*.

## **1.9 TIMING OF IMPLEMENTATION**

The project construction will be initiated in the summer of 2002. The capacity of the reclaimed water satellite plant will be expanded on an as needed basis to provide sewer utility services as demand from planned growth in the Urban Growth Management Area (UGMA) arises.

**Table 1-1. Impacts Summary: Reclaimed Water Satellite Plant**

<b>Element of the Environment</b>	<b>Site 1</b>	<b>Site 2 West</b>	<b>Site 2 Center</b>	<b>Site 2 East</b>	<b>Site 3</b>	<b>No Action Alternative</b>
Earth Resources	<ul style="list-style-type: none"> <li>Disturbance of approximately 2-3 acres during construction.</li> <li>2,500 cy of material moved during excavation.</li> <li>Minimal erosion and sedimentation from construction activities.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> <li>This site is closest to Woodland Creek; highest potential for sediment from construction activities to reach stream.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 2 East. This site is also located approximately 0.2 mile from Woodland Creek.</li> </ul>	<ul style="list-style-type: none"> <li>No impacts to earth resources have been identified.</li> </ul>
Air Resources	<ul style="list-style-type: none"> <li>Dust, and vehicle and construction equipment emissions during construction.</li> <li>Odors related to wastewater breakdown during operation.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> <li>Operational odors would be more pronounced due to rural neighborhood and a greater number of residences near the site.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 2 West.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 2 West.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>No impacts to air resources have been identified.</li> </ul>
Surface Water Resources	<ul style="list-style-type: none"> <li>Slight potential for construction-related sediments to enter surface waters.</li> <li>Site is located approximately 1.5 miles east of Woodland Creek.</li> <li>Operational impacts to surface waters are not anticipated.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1; however, potential for construction-related sediment to enter Woodland Creek is greater as Site 2 West is located approximately 0.6 mile west of the stream.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1; however, potential for construction-related sediment to enter Woodland Creek is greater as Site 2 Center is located approx. 0.4 mile west of the stream.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1; however, potential for construction-related sediment to enter Woodland Creek is greatest as Site 2 East is located approx. 0.2 mile west of the stream.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 2 East.</li> </ul>	<ul style="list-style-type: none"> <li>Continued reliance on individual on-site sewage systems has the potential to result increased contaminant discharges to surface waters from improperly functioning systems.</li> </ul>
Groundwater Resources	<ul style="list-style-type: none"> <li>No construction-related or operational impacts to groundwater resources have been identified.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to impacts described above for surface water resources.</li> </ul>

**Table 1-1. Impacts Summary: Reclaimed Water Satellite Plant (contd.)**

Element of the Environment	Site 1	Site 2 West	Site 2 Center	Site 2 East	Site 3	No Action Alternative
Biological Resources	<ul style="list-style-type: none"> <li>Loss of low-quality upland shrub habitat.</li> </ul>	<ul style="list-style-type: none"> <li>Loss of Douglas fir forest and grass habitat.</li> <li>Potential wetland on site.</li> <li>Birds and larger mammals will move to adjacent habitat during construction.</li> <li>Small mammals, amphibians, and reptiles may be lost during site clearing.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 2 West.</li> </ul>	<ul style="list-style-type: none"> <li>Loss of Douglas fir forest, upland shrubs, and grass.</li> <li>Potential wetland on site.</li> </ul>	<ul style="list-style-type: none"> <li>Loss of low-quality upland shrub habitat and some conifers.</li> <li>Loss of low-quality wetland on site.</li> </ul>	<ul style="list-style-type: none"> <li>No impacts to biological resources have been identified.</li> </ul>
Fish Resources	<ul style="list-style-type: none"> <li>Minor impacts to fish resources may occur as a result of sedimentation from construction activities.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>No impacts to fish resources have been identified.</li> </ul>
Shellfish Resources	<ul style="list-style-type: none"> <li>No impacts to shellfish resources have been identified.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>No impacts to shellfish resources have been identified.</li> </ul>
Noise	<ul style="list-style-type: none"> <li>Construction-related noise from vehicles, equipment, and associated activities, particularly during earthwork activities.</li> <li>Vehicle and machinery noise, and voices during facility operation.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> <li>A greater number of residences would be affected.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>No noise-related impacts have been identified.</li> </ul>

**Table 1-1. Impacts Summary: Reclaimed Water Satellite Plant (contd.)**

<b>Element of the Environment</b>	<b>Site 1</b>	<b>Site 2 West</b>	<b>Site 2 Center</b>	<b>Site 2 East</b>	<b>Site 3</b>	<b>No Action Alternative</b>
Land and Shoreline Use	<ul style="list-style-type: none"> <li>• Neighboring properties would experience short-term construction-related air, noise, and traffic impacts.</li> <li>• Facility operation could adversely affect neighboring properties.</li> </ul>	<ul style="list-style-type: none"> <li>• Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>• Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>• Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>• Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>• Implementation of this alternative would result in inconsistencies with existing comprehensive land use plans.</li> <li>• Zoning densities would not be met.</li> </ul>
Parks and Recreation	<ul style="list-style-type: none"> <li>• No impacts to parks have been identified.</li> <li>• Temporary disruption to bike traffic on bikeways along Martin Way during construction.</li> </ul>	<ul style="list-style-type: none"> <li>• Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>• Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>• Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>• Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>• No impacts to parks and recreational facilities have been identified.</li> </ul>
Aesthetics and Visual Resources	<ul style="list-style-type: none"> <li>• Visual and aesthetic elements would include vehicles, equipment, dust, and a disrupted landscape during construction.</li> <li>• Site would change from undeveloped to a developed property containing structures.</li> </ul>	<ul style="list-style-type: none"> <li>• Construction impacts are as described for Site 1.</li> <li>• Site character would change from undeveloped in a rural residential neighborhood to more industrial in nature.</li> </ul>	<ul style="list-style-type: none"> <li>• Similar to Site 2 West.</li> </ul>	<ul style="list-style-type: none"> <li>• Similar to Site 2 West.</li> </ul>	<ul style="list-style-type: none"> <li>• Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>• No direct impacts have been identified. Future impacts would depend upon future development patterns.</li> </ul>
Historic and Cultural Resources	<ul style="list-style-type: none"> <li>• High probability for hunter-fisher-gatherer resources on site.</li> <li>• Low probability for historic period archaeological resources.</li> </ul>	<ul style="list-style-type: none"> <li>• Low probability for hunter-fisher-gatherer resources and historic period archaeological resources on site.</li> </ul>	<ul style="list-style-type: none"> <li>• Similar to Site 2 West.</li> </ul>	<ul style="list-style-type: none"> <li>• Similar to Site 2 West.</li> </ul>	<ul style="list-style-type: none"> <li>• High probability for hunter-fisher-gatherer resources on site.</li> <li>• Moderate probability for historic period archaeological resources.</li> </ul>	<ul style="list-style-type: none"> <li>• No impacts to historical or cultural resources have been identified.</li> </ul>

**Table 1-1. Impacts Summary: Reclaimed Water Satellite Plant (contd.)**

<b>Element of the Environment</b>	<b>Site 1</b>	<b>Site 2 West</b>	<b>Site 2 Center</b>	<b>Site 2 East</b>	<b>Site 3</b>	<b>No Action Alternative</b>
Transportation	<ul style="list-style-type: none"> <li>• Temporary increase in construction-related traffic; 850 truck trips over 15 to 18 months.</li> <li>• Safety concerns along construction haul routes.</li> <li>• Small numbers of vehicle trips would occur during operation of the plant.</li> </ul>	<ul style="list-style-type: none"> <li>• Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>• Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>• Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>• Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>• No impacts have been identified.</li> </ul>
Public Services and Utilities	<ul style="list-style-type: none"> <li>• Potential for temporary disruptions of utility services may occur during construction.</li> <li>• Temporary disruptions to traffic flow could impede emergency service vehicles.</li> </ul>	<ul style="list-style-type: none"> <li>• Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>• Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>• Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>• Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>• Growth inside each city's UGMA would be limited by existing sewer system capacity. If adequate sewer service is not available, growth inside each City's UGMA may not occur as planned.</li> </ul>

**Table 1-2. Mitigation Measures Summary: Reclaimed Water Satellite Plant**

<b>Element of the Environment</b>	<b>Site 1</b>	<b>Site 2 West</b>	<b>Site 2 Center</b>	<b>Site 2 East</b>	<b>Site 3</b>	<b>No Action Alternative</b>
Earth Resources	<ul style="list-style-type: none"> <li>Stringent erosion control measures will be employed at site boundaries to minimize off-site sediment transport.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>No impacts were identified; therefore, no mitigation measures have been developed.</li> </ul>
Air Resources	<ul style="list-style-type: none"> <li>Construction dust and equipment will be minimized during construction.</li> <li>Air from preliminary treatment building and batch reactor will be drawn off and treated via a two-stage odor control process.</li> <li>Buildings will be located to maximize distance from closest receptor(s).</li> <li>Odor generating processes will be fully enclosed.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> <li>Several odor reducing processes to be located at Martin Way Pump Station.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>No impacts were identified; therefore, no mitigation measures have been developed.</li> </ul>
Surface Water Resources	<ul style="list-style-type: none"> <li>Stringent erosion and sedimentation controls will be employed.</li> <li>Construction will occur in accordance with <i>Lacey Development Guidelines</i>.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>No impacts were identified; therefore, no mitigation measures have been developed.</li> </ul>
Groundwater Resources	<ul style="list-style-type: none"> <li>No impacts were identified.</li> <li>Site will be reviewed for presence of contamination prior to construction.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>No impacts were identified; therefore, no mitigation measures have been developed.</li> </ul>

**Table 1-2. Mitigation Measures Summary: Reclaimed Water Satellite Plant (contd.)**

<b>Element of the Environment</b>	<b>Site 1</b>	<b>Site 2 West</b>	<b>Site 2 Center</b>	<b>Site 2 East</b>	<b>Site 3</b>	<b>No Action Alternative</b>
Biological Resources	<ul style="list-style-type: none"> <li>No impacts identified, therefore no mitigation measures have been developed.</li> </ul>	<ul style="list-style-type: none"> <li>Areas that contain sensitive plant or wildlife species will be avoided whenever possible.</li> <li>Disturbed wetlands would be restored following construction.</li> <li>Erosion control BMPs will be followed.</li> <li>Vegetated buffers will be maintained around plant to minimize noise, light, and visual impacts to wildlife.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 2 West.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 2 West.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 2 West.</li> <li>Mitigation for disturbed wetlands would be conducted in accordance with applicable federal, state, and local regulations.</li> </ul>	<ul style="list-style-type: none"> <li>No impacts were identified; therefore, no mitigation measures have been developed.</li> </ul>
Fish Resources	<ul style="list-style-type: none"> <li>No impacts identified, therefore no mitigation measures have been developed.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>No impacts were identified; therefore, no mitigation measures have been developed.</li> </ul>
Shellfish Resources	<ul style="list-style-type: none"> <li>No impacts identified, therefore no mitigation measures have been developed.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>No impacts were identified; therefore, no mitigation measures have been developed.</li> </ul>
Noise	<ul style="list-style-type: none"> <li>Construction noise will be mitigated through proper maintenance of equipment, use of proper tools and attenuation barriers, and adherence to approved hours.</li> <li>Noisy operations will be housed inside insulated structures.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>No impacts were identified; therefore, no mitigation measures have been developed.</li> </ul>

**Table 1-2. Mitigation Measures Summary: Reclaimed Water Satellite Plant (contd.)**

<b>Element of the Environment</b>	<b>Site 1</b>	<b>Site 2 West</b>	<b>Site 2 Center</b>	<b>Site 2 East</b>	<b>Site 3</b>	<b>No Action Alternative</b>
Land and Shoreline Use	<ul style="list-style-type: none"> <li>Potentially affected residents will be notified.</li> <li>Inconvenience to residences and businesses will be minimized.</li> <li>Plant will be designed to be compatible with surrounding land uses; some structures will be placed below grade.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>Portions of the UGMA would be re-designated as rural where adequate wastewater utility services cannot be provided.</li> <li>Urban growth would be restricted to low density land uses.</li> </ul>
Parks and Recreation	<ul style="list-style-type: none"> <li>Minimize disruption of bike lanes during construction.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>No impacts were identified; therefore, no mitigation measures have been developed.</li> </ul>
Aesthetics and Visual Resources	<ul style="list-style-type: none"> <li>Thoughtful facility placement, setbacks, vegetative screening or buffers.</li> <li>Plant design would conform to surrounding structures in form, scale, and character.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>No impacts identified; therefore, no mitigation measures have been developed.</li> </ul>
Historic and Cultural Resources	<ul style="list-style-type: none"> <li>Coordinate with Nisqually and Squaxin Island Tribes.</li> <li>Conduct professional archaeological field reconnaissance.</li> <li>Coordinate with Tribes and professional archaeologist if resources are found.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1; however, a field reconnaissance is not recommended.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 2 West.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 2 West.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>No impacts identified; therefore, no mitigation measures have been developed.</li> </ul>

**Table 1-2. Mitigation Measures Summary: Reclaimed Water Satellite Plant (contd.)**

<b>Element of the Environment</b>	<b>Site 1</b>	<b>Site 2 West</b>	<b>Site 2 Center</b>	<b>Site 2 East</b>	<b>Site 3</b>	<b>No Action Alternative</b>
Transportation	<ul style="list-style-type: none"> <li>• Payment of City of Lacey "disruption fees."</li> <li>• Minimize safety hazards during construction.</li> </ul>	<ul style="list-style-type: none"> <li>• Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>• Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>• Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>• Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>• No impacts were identified; therefore, no mitigation measures have been developed.</li> </ul>
Public Services and Utilities	<ul style="list-style-type: none"> <li>• Coordinate with local utility and emergency service providers to minimize disruption.</li> </ul>	<ul style="list-style-type: none"> <li>• Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>• Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>• Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>• Similar to Site 1.</li> </ul>	<ul style="list-style-type: none"> <li>• Amend applicable city and county documents to redesignate urban lands to rural uses.</li> </ul>



## CHAPTER TWO: DESCRIPTION OF ALTERNATIVES

The State Environmental Policy Act (SEPA) requires that an Environmental Impact Statement (EIS) identify and discuss reasonable alternatives to a proposed action. Alternatives discussed need not be exhaustive, but must present sufficient information for reasoned choice of alternatives. The word “reasonable” is intended to limit the number and range of alternatives, as well as the amount of detailed analysis for each alternative. Reasonable alternatives include actions that feasibly attain or approximate a proposal’s objectives, but at a lower environmental cost or decreased level of environmental degradation (WAC 197-11-440).

An EIS must examine all areas of probable significant adverse environmental impacts associated with the various alternatives, including the no action alternative. However, in accordance with WAC 197-11-620, a Supplemental EIS (SEIS) should not include analyses of actions, alternatives, or impacts that are contained in the previously prepared EIS.

The *Hawks Prairie Reclaimed Water Project Final Supplemental EIS* (June 2001) (*2001 Final SEIS*) detailed the project objective and criteria for selection of alternatives to meet the project needs are discussed. In addition, it presented alternatives for reclaimed water satellite plant sites, constructed wetland polishing ponds and groundwater recharge basin sites as well as associated conveyance systems, and use areas.

The alternative reclaimed water satellite plant site discussed in this Addendum was identified after the publication of the *2001 Final SEIS*. This document contains a summary of the information presented in the *2001 Final SEIS*, as well as an

analysis of the conditions present at the newly identified site, Site 3. The information presented in this document does not substantively change the analysis of significant impacts and alternatives from the previous document (WAC 197-11-706).

### 2.1 PROJECT PROPONENT

The LOTT (cities of Lacey, Olympia, Tumwater, and Thurston County) Wastewater Alliance is the project proponent.

### 2.2 PROJECT LOCATION

The potential project sites are located in the Hawks Prairie Resource Management Basin in northeast Thurston County (see Figure 1-1). The newly added site is identified as Site 3. Potentially affected areas include portions of the City of Lacey and unincorporated Thurston County. Site 3 is located in the City of Lacey.

### 2.3 PROJECT OBJECTIVE

LOTT’s Wastewater Resource Management Plan is an environmentally-based system for adding small units of new wastewater treatment capacity, responding just-in-time to actual measured conditions. New units of wastewater treatment and discharge capacity will be gained through reclaimed water and groundwater recharge methods. The objective of the Hawks Prairie Reclaimed Water Project is to provide the first increment of new wastewater treatment capacity, to accommodate projected population and employment growth within the LOTT sewer service area. Wastewater services provided through this project are intended to be consistent

with adopted land use, water use, and wastewater plans, policies, and regulations; incorporate public values; and be cost effective over the long-term.

## 2.4 PURPOSE AND NEED FOR THE PROJECT

The purpose of the Hawks Prairie Reclaimed Water Project is to ensure provision of adequate wastewater facilities to accommodate projected wastewater flow increases that will accompany population and employment growth within the LOTT service area. The project is needed to achieve fulfillment of elements of the LOTT Wastewater Resource Management Plan that pertain to the Hawks Prairie Resource Management Basin.

The purpose and need for wastewater service improvements in the LOTT service area, including the Hawks Prairie Resource Management Basin, are described in Chapter 1 of the 1996 *LOTT Wastewater Resource Management Plan Final Programmatic Environmental Impact Statement* (Final PEIS) and are further defined in Chapter 9 of the 1998 *LOTT Wastewater Resource Management Plan and Final Supplemental Environmental Impact Statement* (1998 Final SEIS).

As the first of LOTT's Reclaimed Water Satellites, the Hawks Prairie Satellite is important for logistical and public education reasons. First, implementation of this project will demonstrate the length of time required to build these facilities. This information will be essential for ensuring "just in time" implementation of future increments of new capacity. Second, this project will provide the first satellite plant, pond and groundwater recharge facilities available for public viewing in the LOTT service area. Third, it will provide practical demonstrations of reclaimed water uses and groundwater recharge capability.

## 2.5 ALTERNATIVES EVALUATION CRITERIA

In identifying possible alternatives for site locations in the Hawks Prairie area, potential sites were measured against certain criteria in order to determine if they meet the objective of the project and if they appear to be practical and technically feasible. Those criteria are presented below for each of the reclaimed water components. These criteria were examined as part of the 1998 Final SEIS.

### 2.5.1 Reclaimed Water Satellite Plant Sites Alternatives

Reclaimed water satellite plants must be located in relatively close proximity to the existing Martin Way force main or pump station, which will provide a source of raw wastewater for the reclamation process. To meet the "just in time" objective, it is LOTT's intent to have the satellite plant fully utilized as soon as it begins operation. In this way, the plant provides immediate relief to the overall system by diverting and treating to its maximum capacity. Siting the reclaimed water satellite plant in close proximity to existing sewer lines will also minimize the residence time of raw wastewater in conveyance piping, which will reduce the potential for odor generation at the plant.

Properties considered for the reclaimed water satellite plant must be of sufficient size to allow for construction of the initial plant and future plant upgrades. A minimum of about three acres would be required for the initial plant and buffer, with a total of at least four acres needed at full plant site buildout.

The configuration or location of potential sites should be such that operation of the reclaimed water satellite treatment plant could occur with minimal adverse impacts on adjacent properties.

Because the LOTT Wastewater Alliance itself lacks power of condemnation, acquisition of property would normally be through the open real estate market. Individual LOTT partner

municipalities could condemn property on behalf of LOTT; however, such an action would only occur if no other reasonable alternative exists. Thus, alternatives for the reclaimed water satellite plant sites will initially be limited to properties that are currently available for purchase. As was identified as a possibility in the *2001 Final SEIS*, one or more of the alternative reclaimed water satellite plant sites initially evaluated was purchased by another party after release of the *2001 Final SEIS*. This Addendum addresses a possible third reclaimed water satellite treatment plant area, identified as Site 3, that has become available for purchase since the *2001 Final SEIS* was published and that meets LOTT's evaluation criteria.

### **2.5.2 Constructed Wetland Polishing Ponds and Groundwater Recharge Basin Sites**

Potential constructed wetland polishing ponds and groundwater recharge basin sites must be large enough to accommodate up to 30 acres of ponds and 5 to 10 acres of recharge basins that will need to be constructed. Thus, the identification of alternative sites was focused on sites of about 40 acres or larger. Five potential constructed wetland polishing ponds and groundwater recharge basin sites were evaluated in the *2001 Final SEIS*. Since publication of that document, LOTT purchased Site B in July 2001. No new constructed wetland or groundwater recharge sites have been identified. Refer to the *2001 Final SEIS* for a discussion of these facilities.

### **2.5.3 Use Areas**

Potential "use areas" would include any land or water use activity where there is an opportunity for substituting potable water use with reclaimed water use in a manner that is consistent with the state's Water Reclamation and Reuse Standards (Washington State Departments of Health and Ecology, September 1997). Potential use areas need to be in reasonable proximity of the reclaimed water satellite plant, recharge facilities, or the associated reclaimed water conveyance

system. Potential use areas were examined in the *2001 Final SEIS*.

## **2.6 ALTERNATIVES**

One new potential reclaimed water satellite plant site has been identified since the publication of the *2001 Final SEIS*.

### **2.6.1 Reclaimed Water Satellite Plant Alternatives**

To implement the Wastewater Resource Management Plan, LOTT will develop and operate a reclaimed water satellite plant within the Hawks Prairie Resource Management Basin. Initially, the site will be designed to treat 1.0 million gallons per day (mgd) of wastewater. As demand for wastewater services increases in the LOTT service area, capacity may be upgraded in increments until it reaches an ultimate capacity of 5.0 mgd. Constructed wetlands polishing ponds and groundwater recharge basins will not be constructed at the Hawks Prairie reclaimed water plant site.

Wastewater will be pumped in a new pipeline from the existing Martin Way force main or pump station to the reclaimed water satellite plant. The wastewater will first enter a preliminary treatment building that will house screening and vortex-type separator grit removal equipment. Some of these activities may be located at the Martin Way Pump Station. All screenings and grit will be transported to the Thurston County Transfer Station by truck for ultimate disposal.

The residual wastewater will undergo advanced biological treatment for nutrient removal in biomembrane reactors. The reactors will cycle through several mixing and aeration phases. All product water will pass through a membrane filter placed in the mixed liquor. Following the biomembrane process, the treated effluent will be transferred for disinfection.

Disinfection of the treated water will involve the exclusive use of sodium hypochlorite for primary disinfection as well as to provide a disinfection

residual in the reclaimed water as it is pumped from the plant in route to the constructed wetland polishing ponds or use areas.

Residual solids from the reactors will be returned to the Martin Way force main or pump station via a new return pipeline. From there they will be conveyed to the Budd Inlet Treatment Plant for treatment and disposal.

The plant will be designed to treat wastewater to Washington State Class A reclaimed water standards. According to the state's Water Reclamation and Reuse Standards, Class A Reclaimed Water means:

...reclaimed water that, at a minimum, is at all times an oxidized, coagulated, filtered, disinfected wastewater. The wastewater shall be considered adequately disinfected if the median number of total coliform organisms in the wastewater after disinfection does not exceed 2.2 per 100 milliliters, as determined from the bacteriological results of the last 7 days for which analyses have been completed, and the number of total coliform organisms does not exceed 23 per 100 milliliters in any sample (Washington State Departments of Health and Ecology, September 1997).

Infiltrated groundwater will meet the state primary and secondary maximum contaminant level at the point of compliance as modified for local groundwater quality as indicated in Chapter 246-290 WAC. Due to concerns over relatively high nitrate-nitrogen concentrations in local area groundwaters, the plant will be designed to reduce total nitrogen levels in the effluent to one-half or less of the drinking water standard for nitrate-nitrogen of 10 milligrams per liter.

The plant will be designed, constructed, and operated to be aesthetically pleasing and compatible with surrounding neighborhoods. This will include landscaping to provide effective visual screening. At 1.0 mgd, the plant and associated landscaping and access roads will occupy about three acres. At 5.0 mgd, that area

will increase to about four acres (see the conceptual site layouts shown on Figures 2-1 and 2-2, respectively).

Measures will be undertaken to control odors at the plant. The preliminary treatment buildings will be ventilated and the biological reactors covered. The air from inside the reactors will be drawn off and treated. Air from plant processes may need to be treated by a two-stage system to meet the odor level requirements at the fence line. The first system will consist of a chemical scrubber or a Phoenix carbon system. The chemical scrubber would require use of sodium hypochlorite. The second stage would consist of either a biofilter or a virgin activated carbon filter. The facility will comply with all applicable odor standards.

The *2001 Final SEIS* identified and evaluated four potential reclaimed water satellite plant sites within two larger zones. Refer to the *2001 Final SEIS* for a description of those facilities. One additional site, Site 3, has been identified since the publication of the *2001 Final SEIS* and is being evaluated in this Addendum.

Reclaimed water satellite plant Site 3 is a 3.38-acre parcel situated in the 6100 block of Martin Way in the City of Lacey. It is located in Section 15, Township 18 North, and Range 1 East (see Figures 1-1 and 2-3). The site is bordered by Martin Way East to the north, commercial development to the east, the Lacey maintenance yard and a former gravel pit to the south, and a forested area to the west.

An emergent wetland occurs near the center of the site and occupies approximately 0.5 acre. The seasonally flooded wetland has been cleared in the past and is dominated by invasive wetland plant species

As described in the *2001 Final SEIS*, the existing Martin Way force main would provide a source of raw wastewater to the reclaimed water satellite plant. New conveyance piping would need to be constructed to carry the raw wastewater to the reclaimed water satellite plant and to carry solids from the plant back to the force main. New

conveyance pipelines would be installed to transport reclaimed water from the satellite plant to the constructed wetland polishing ponds and groundwater recharge basin site. The proposed conveyance pipeline route is illustrated in Figure 1-1. The total length of pipeline alignment would be approximately 15,750 feet.

### **2.6.2 Constructed Wetland Polishing Ponds, Groundwater Recharge Basin, and Associated Conveyance System Alternatives**

Potential constructed wetland polishing ponds, groundwater recharge basin locations, and associated conveyance pipelines were described in the *2001 Final SEIS*. No additional constructed wetland or groundwater recharge sites are being proposed at this time.

### **2.6.3 Use Area Alternatives**

Potential use areas were described in the *2001 Final SEIS*. No additional sites are being proposed at this time.

### **2.6.4 No Action Alternative**

The No Action Alternative was described in the *2001 Final SEIS*. Under the No Action Alternative, no major capital facilities would be constructed to increase the LOTT wastewater collection, conveyance, or treatment capacity.

## **2.7 PROJECT PHASING AND SCHEDULE**

The project will be initiated in the fall of 2002. The capacity of the reclaimed water satellite plant will be increased on an as needed basis to provide adequate sewer utility services as demand from planned growth in the UGMA arises.

## CHAPTER THREE: AFFECTED ENVIRONMENT SITE 3

### 3.1 EARTH RESOURCES

The following section describes only the earth resources specific to alternative reclaimed water satellite plant Site 3. Section 4.1 of the Hawks Prairie Final Supplemental Environmental Impact Statement (referred to as the *2001 Final SEIS*) contains more information on earth resources in the Hawks Prairie implementation area.

The following table has been updated to include soils information for alternative reclaimed water satellite plant Site 3 (Table 3-1).

The topography of Site 3 slopes from the southern border, down toward Martin Way East, and the western portion of the site.

### 3.2 AIR RESOURCES

The following section describes only the air resources specific to alternative reclaimed water

satellite plant Site 3. Section 4.2 of the *2001 Final SEIS* contains more information on air resources in the Hawks Prairie implementation area.

#### Site 3

Alternative reclaimed water satellite plant Site 3 is located along Martin Way East. This site is currently undeveloped and covered in weedy, scrub vegetation and is not a source of odors or air pollutants at this time. Off-site sources of odor are primarily attributable to vehicle traffic on nearby roadways.

A residential development is located approximately 500 feet to the south of Site 3. To the east and west of Site 3 are commercial properties.

**Table 3-1. Soil Types and Characteristics**

Facility Location	Major Soil Type	Percent Slope	Runoff Rate	Erosion Hazard	Permeability
Site 1	Spanaway gravelly sandy loam	0 to 3	slow	slight	moderately rapid
Site 2 East	Indianola loamy sand	3 to 15	slow	slight	rapid
Site 2 Center	Indianola loamy sand	3 to 15	slow	slight	rapid
Site 2 West	Giles silt loam	3 to 15	slow	slight	moderate
	Skipopa silt loam	3 to 15	slow	slight	moderate
Site 3	Yelm fine sandy loam	0 to 3	slow	slight	moderately rapid
	Giles silt loam	3 to 15	slow	slight	moderate

### 3.3 SURFACE WATER RESOURCES

Section 4.3 of the *2001 Final SEIS* contains information on surface water resources for the Hawks Prairie implementation area. Site 3 is not located near marine surface waters.

Woodland Creek is located approximately 0.2 mile from Site 3, compared to 1.5 miles east of Site 1, 0.2 mile from Site 2 East, 0.4 mile from Site 2 Center, and 0.6 mile from Site 2 West. Woodland Creek and the Woodland Creek Basin are described in the *2001 Final SEIS*.

The reach of Woodland Creek in the vicinity of Site 3, from Martin Way East to Lake Lois, contains several stormwater outfalls with identified water quality problems (Thurston County, 1995). The outfalls were identified from the completion of the *Woodland and Woodard Creek Basins Stormwater Quality Survey* (Thurston County Environmental Health Division, 1989) and the Lacey Stormwater Monitoring Program (1992). Four water quality and water quantity problem locations were identified within 0.5 mile of Site 3, including exceedences of water quality criteria, sediment deposition in Woodland Creek, fish passage issues, and bank erosion. The City of Lacey has recently constructed a stormwater treatment facility on 7<sup>th</sup> Avenue SE which treats stormwater prior to discharge to Woodland Creek. This facility should help alleviate the water quality and quantity problems experienced in Woodland Creek.

### 3.4 GROUNDWATER RESOURCES

Section 4.4 of the *2001 Final SEIS* contains information on groundwater resources for the Hawks Prairie implementation area.

Areas of known and potential groundwater contamination, primarily nitrogen and phosphorous from individual waste disposal systems, and potentially residual levels of agricultural chemicals (EDB) have been

historical problems to the south of the Hawks Prairie implementation area. No known areas of contamination are present near Site 3 (Thurston GeoData Center, 1997).

### 3.5 BIOLOGICAL RESOURCES

The following section describes only the biological resources specific to alternative reclaimed water satellite plant Site 3. Section 4.5 of the *2001 Final SEIS* contains more information on biological resources in the Hawks Prairie implementation area.

#### Site 3

Reclaimed water satellite plant Site 3 is located on the south side of Martin Way East in the City of Lacey, Washington. The site is bounded on the north by Martin Way East, on the east by commercial development, on the west by a small forested area, and on the south by the Lacey maintenance yard and a former gravel pit. A residential development is located south of the former gravel pit. Woodland Creek flows through the wooded parcel to the west of the site, approximately 0.2 mile from Site 3. Parts of the site have been cleared, graded, and filled in the past.

The site is mostly vegetated except for a small area that contains refuse and landscaping debris. Scot's broom and non-native grasses dominate the vegetative cover. Several mature conifer trees exist toward the south end of the site, and two trees stand on the northeastern boundary. No streams or high-quality native plant communities were confirmed on the site. The western border and the southeastern corner of the property are connected to native forest habitats. The forested area to the west supports a reach of Woodland Creek, and could potentially contain riparian wetlands.

A seasonally-flooded emergent wetland occurs near the center of the site, extending northward from the base of the hill that occupies the southern half of the site, toward Martin Way.

The wetland has been cleared in the past and supports a mixture of invasive wetland plant species and may cover an area up to 0.5 acre.

The Thurston County Critical Areas Inventory, the Local Wetland Inventory, and the National Wetland Inventory maps for the area do not identify wetlands on Site 3. However, a map produced by Thurston County Stormwater (September 1994) of wetlands in the Woodland Creek basin shows a wetland on Site 3. Additionally, the Thurston County Stream and Wetland Buffers map shows a buffer on Site 3 and several adjacent properties. Field investigations have verified the presence of wetlands on the site; however, the wetland has not been delineated. Further investigations of the site would be conducted prior to development of the site.

### 3.6 FISH RESOURCES

Section 4.6 of the *2001 Final SEIS* contains information on fish resources for the Hawks Prairie implementation area. This information is summarized below.

Woodland Creek is the only major stream located within the project area and is approximately 0.2 mile west of Site 3. It originates from small wetlands and lakes, and drains into the southern tip of Henderson Inlet. Approximately 5.6 miles of Woodland Creek are accessible to anadromous fish when flows are sufficient. In Woodland Creek, chum, coho, and chinook salmon spawn primarily below river mile (RM) 3.3. Juveniles may use the entire length of the stream for rearing habitat. However, The *Martin Way Culvert* blocks fish passage during low flows (Thurston County et al. 1995).

Fish populations likely to be present in Woodland Creek are chinook (*Oncorhynchus tshawytscha*), coho (*O. kisutch*), and chum (*O. keta*).

#### **Sensitive/Unique Species**

Three salmonid species potentially affected by the project, chinook salmon, bull trout, and coho

salmon, are listed or are candidates for listing under the Endangered Species Act (ESA). These species may or may not be present in Woodland Creek. Chinook salmon are “threatened” and impacts to the species are regulated by NMFS. Bull trout are also “threatened” but impacts to this species are regulated by USFWS. Coho salmon are candidates for listing (under NMFS). Critical Habitat has been designated for chinook salmon and determined “unwarranted” for bull trout.

### 3.7 SHELLFISH RESOURCES

Section 4.7 of the *2001 Final SEIS* contains information on shellfish water resources for the Hawks Prairie implementation area. Impacts to shellfish resources are not anticipated as a result of development on Site 3.

### 3.8 NOISE RESOURCES

The following section describes only the noise resources specific to alternative reclaimed water satellite plant Site 3. Section 4.8 of the *2001 Final SEIS* contains more information on noise resources in the Hawks Prairie implementation area.

#### **Site 3**

Site 3 is currently undeveloped and is not a source of noise in the area. Off-site sources of noise in the vicinity of Site 3 are predominantly traffic-related, as this site is adjacent to Martin Way East.

A residential community is located approximately 350 feet to the south of Site 3. Intermittent noise sources from these homes include vehicles, lawn mowers, power tools, human voices, and other typical residential noises. Other potential noise receptors are located in the commercial property/office building adjacent to the east boundary of the site. No sensitive receptors (e.g., hospitals, nursing homes, day-care centers) exist within approximately 0.5 mile of Site 3.

### 3.9 LAND AND SHORELINE USE

The following section describes only the land and shoreline use specific to alternative reclaimed water satellite plant Site 3. Section 4.9 of the *2001 Final SEIS* contains more information on land and shoreline use in the Hawks Prairie implementation area.

The Hawks Prairie Planning Area includes the extreme northeast portion of the Lacey Urban Growth Area. It is bounded by Puget Sound on the north, Carpenter Road and Draham Street on the west, Interstate-5 on the south, and Meridian Road on the west. The majority of the Hawks Prairie Planning Area is within the existing municipal boundaries of the City of Lacey; however, a portion of the area is within unincorporated Thurston County.

The City of Lacey considers the Hawks Prairie Planning Area has the greatest potential for development. It has extensive vacant land resources and has historically served a wide range of land uses, such as industrial development, commercial development, and single family residential development including the Beachcrest and Nisqually Crest developments. Under the comprehensive plan, the emphasis for future growth in the Hawks Prairie Planning Area will be placed on residential uses; however, additional commercial and light industrial uses will also be encouraged.

#### Existing Land Use at Site 3

The alternative reclaimed water satellite plant Site 3 is located within the land use jurisdiction of the City of Lacey. The following table has been updated to include the summary of the existing land use at the alternative reclaimed water satellite plant Site 3 (Table 3-2).

The raw wastewater supply pipeline and solids return pipeline for Site 3 would extend along Martin Way East from the Martin Way Pump

Station to the site (refer to Figure 1-1). The reclaimed water conveyance pipeline would extend along Martin Way East to Carpenter Road Northeast. It would then follow Carpenter Road Northeast across Interstate 5 to Britton Parkway, follow along Britton Parkway to roughly Marvin Road, where it would extend north to the constructed wetland polishing pond/groundwater recharge basin site. This alignment is similar to the alignments described in the *2001 Final SEIS* for potential reclaimed water satellite plant sites 2 East, Center, and West.

### 3.10 PARKS AND RECREATION

Section 4.10 of the *2001 Final SEIS* contains information on parks and recreation in the Hawks Prairie implementation area. This information is summarized below.

Several parks and recreational facilities in the general project area are owned and maintained by Thurston County and the City of Lacey. These facilities are managed under applicable City and County park and recreation plans, including the City of Lacey's 1997 *Comprehensive Plan for Outdoor Recreation* and the *Thurston County Comprehensive Parks, Recreation, Preserve, and Trails Plan 2015* (1996). These plans establish goals and policies targeted at managing park and recreation facilities, and they address existing facilities, identify future park and recreation needs, and establish plans for future park land acquisition.

Site 3 is adjacent to Martin Way East, a major arterial with improved bike lanes and proposed Class 2 bikeways. Site 3 is approximately 0.5 mile from Lake Lois Park. No other parks or recreational resources are located in the vicinity of Site 3.

**Table 3-2. Reclaimed Water Satellite Plant Sites Existing Land Use**

<b>SITE</b>	<b>PLANNING AREA</b>	<b>LAND USE DESIGNATION</b>	<b>DESCRIPTION</b>
Site 1	Tanglewilde/Thompson Place	Mixed Use High Density Corridor (MHDC)	Currently undeveloped. Located in area of commercial strip development fronting Martin Way East. Property abuts residential development on the north.
Site 2 East	Pleasant Glade	Moderate Density Residential (MD)	Currently occupied by one single-family residence. Surrounding area is characterized by low density single family residential development.
Site 2 Center	Pleasant Glade	Moderate Density Residential (MD)	Same as Site 2 East. Site 2 Center is adjacent to Site 2 East.
Site 2 West	Pleasant Glade	Low Density Residential 0-4 (LD 0-4) Open Space Institutional District (OS-I)	Currently undeveloped with mixture of wooded and cleared areas. Surrounding area is characterized by low density single family residential development. Twenty-one single family residences are adjacent to property.
Site 3	Tanglewilde/Thompson Place	Central Business District (CBD-7)	Currently undeveloped. Located in area of commercial strip development fronting Martin Way East. Property abuts an Open Space zone (OS-I) on the south and southeast.

### 3.11 AESTHETICS AND VISUAL RESOURCES

The following section describes only aesthetics and visual resources specific to alternative reclaimed water satellite plant Site 3. Section 4.11 of the *2001 Final SEIS* contains more information on aesthetics and visual resources in the Hawks Prairie implementation area.

#### Site 3

Alternative reclaimed water satellite plant Site 3 is located along Martin Way East within the jurisdiction of the City of Lacey. This site is located in a primarily commercial/retail area near an interchange of Interstate-5 (Figure 2-3). No views of natural or man-made landmarks are available from this site. Views from surrounding areas when looking toward and across this site are of a vacant lot. The aesthetic character of the neighborhood is urbanized commercial.

This site is currently undeveloped and contains mostly weedy, scrub vegetation and several trees. Martin Way East bounds the site to the north. North of Martin Way East are commercial/industrial businesses and some areas of open space. The site is bounded to the east by commercial businesses, to the west by undeveloped forested land; and to the south by the Lacey maintenance site, a former gravel pit, and a residential development further to the south. The residential development is buffered from the site by a stand of trees.

### 3.12 HISTORIC AND CULTURAL PRESERVATION

The following section describes only historic and cultural preservation issues specific to alternative reclaimed water satellite plant Site 3. Section 4.12 of the *2001 Final SEIS* contains more information on historic and cultural

preservation issues in the Hawks Prairie implementation area.

### Site 3

Larson Anthropological Archaeological Services (LAAS) conducted an historic and cultural resources overview for the proposed reclaimed water satellite plant sites, the constructed wetlands polishing pond and recharge facility sites, and conveyance line routes in the Hawks Prairie area (Forsman et al. 2001). LAAS conducted archival review and a literature search, and the LOTT Wastewater Alliance conducted tribal consultation with the Squaxin Island Tribe and the Nisqually Tribe. Both Tribes stated that the Hawks Prairie area was used by Indian people for resource gathering (Forsman et al. 2001:5-6). Archival review revealed that there are no recorded hunter-fisher-gatherer or historic period archaeological resources on Site 3. There are also no recorded historic buildings on Site 3. One inventoried historic building, the Hawks Prairie Fast Lube/Esspresso (PSI-231), was recorded 0.5 miles east of Site 3 (Garris and Holstine 1995).

Site 3 is a rectangular parcel that occupies the sloping edge of a terrace east of the Woodland Creek floodplain. The Site 3 landform was ice-free 15,000 years ago and available to hunter-fisher-gatherers by 14,000 years ago (Porter and Swanson 1998). The first hunter-fisher-gatherer land use probably consisted of hunting and plant gathering beginning about 12,000 years ago when the local climate was hotter and drier (Barnosky et. al., 1987; Brubaker 1991; Whitlock 1992). The climate shifted to a more temperate state, similar to our current weather, about 6,000 years ago resulting in a denser forest and reduced land game populations. Hunter-fisher-gatherers may have started managing Hawks Prairie through prescribed burning at this time to discourage the incursion of Douglas fir onto the grasslands as native people did in other prairies in Western Washington (Hedlund 1973, 1983; Lewarch et. al., 2000; Norton 1979). Salmon also probably started running up Woodland Creek around 5,000 years ago. After neighboring Indians introduced horses around 1800, Hawks Prairie gained additional

importance as a grazing area. Government surveyors described the western edge of the Site 3 landform as a fir and cedar forest with two soil types (United States Surveyor General 1853). The northern two-thirds of Site 3 lies on a flat terrace above Woodland Creek. The types of hunter-fisher-gatherer land use expected in the Site 3 landform would probably consist of short-term fishing camps or hunting camps established on flat terraces above Woodland Creek.

Site 3 is within an area with the overlapping aboriginal territories of two groups, a Nisqually band known as the tudádab of McAllister Creek and the Sahehwamish-affiliated Noo-seh-chatl of South Bay (Gibbs 1877:178; Simmonds 1927:211; Smith 1940:12-13, 28). Descendants of the Noo-seh-chatl are members of the contemporary Nisqually Tribe and are probably members of the contemporary Squaxin Island Tribe. Most of the descendants of the tudádab are members of the contemporary Nisqually Tribe. Nisqually and Squaxin Island people may have used the Site 3 landform for seasonal camps and salmon processing areas while fishing at Woodland Creek. Site 3 is on the terraced edge of the Woodland Creek floodplain, one-third of a mile west of the 1854 western boundary of Hawks Prairie and 300 feet southeast of Woodland Creek. Woodland Creek is a salmon-bearing stream that drains into Henderson Inlet (Williams et. al., 1975:13:103). Site 3 has a high probability for hunter-fisher-gatherer archaeological resources such as lithic scatters, fire hearths, and stone tools associated with short-term hunting, fishing and plant gathering camps. Camps would most likely be on flat areas such as the northern two-thirds of Site 3.

Site 3 was within lands owned by Albert Lee Kegley, a Lacey dairy farmer, in 1925 (Metsker 1925; Polk 1924). A 1937 map shows a building 1,000 feet northeast of Site 3 (United States Geological Survey 1937). Site 3 was probably used for grazing dairy cattle in the 1920s. Kegley may also have constructed outbuildings associated with dairy operations in Site 3. There is a moderate probability for historic archaeological resources associated with

the 1920s dairy farm. The types of historic period archaeological resources expected in Site 3 might include historic refuse, building foundations, and remnants of agricultural outbuildings. Aerial photographs indicate standing buildings on Site 3 in the late 1990s, which might have been associated with dairy operations (Thurston County Assessor 2001).

### 3.13 TRANSPORTATION

Section 4.13 of the *2001 Final SEIS* contains information on transportation issues in the Hawks Prairie implementation area. This information is summarized below.

A number of roadways in the Hawks Prairie Resource Management Basin could potentially be affected by construction of a reclaimed water satellite plant and/or conveyance lines associated with Site 3. Among the roadways identified is Martin Way East, a 5-lane major arterial.

All major roadways and intersections in the project vicinity are operating at acceptable levels of service.

Site 3 is located adjacent to Martin Way East. This segment of Martin Way East is classified as an arterial roadway. It has five lanes and a paved shoulder with bike lanes (Aust, personal communication, 2000).

### 3.14 PUBLIC SERVICES AND UTILITIES

Section 4.14 of the *2001 Final SEIS* contains information on public services and utilities in the Hawks Prairie implementation area. This information is summarized below.

#### Wastewater Disposal

Local sewer service and connections to the LOTT system are provided by the sewer utilities of the cities of Lacey, Olympia, and Tumwater. In compliance with the state Growth Management Act (Chapter 36.70A RCW), each city has adopted policies and procedures in their respective comprehensive land use plans and

municipal codes to ensure that local sewer capacity will be available to serve proposed new development.

The City of Lacey maintains a local sewage system that collects and conveys wastewater to a LOTT interceptor located near the intersection of Martin Way and Desmond Drive.

#### Water Supply

Issues such as water service areas, design standards, and service priority for new development are addressed in the North Thurston County Coordinated Waster System Plan (CWSP). The CWSP was adopted in 1986 and updated in 1996.

The City of Lacey provides public water supplies to approximately 38,000 customers in its service area. Lacey operates 17 wells distributed throughout its service area. The City of Olympia also provides potable water to Thurston County PUD #1 in portions of the Lacey area. Olympia also has a contractual agreement with the City of Lacey to wholesale a maximum of two million gallons per day from McAllister Springs. This water could be used to augment Lacey's water supplies, if needed.

#### Fire Protection and Emergency Medical Services

Thurston County Fire District #3 provides fire protection and emergency medical services (Medic 1) in the City of Lacey and the Lacey UGMA. Fire District #3 has a total of seven stations within the city and five stations outside of the city limits. Response time varies from four to eight minutes depending on proximity of a call for assistance to a station.

#### Electricity and Gas

Puget Sound Energy provides electrical and natural gas service to Thurston County, including the Lacey UGMA.



## CHAPTER FOUR: IMPACTS TO RECLAIMED WATER SATELLITE PLANT SITE 3

### 4.1 IMPACTS

This section discusses the potential impacts associated with the construction and operation of a reclaimed water satellite plant at Site 3. Chapter 5 of the Hawks Prairie Final Supplemental Environmental Impact Statement (referred to in this document as the *2001 Final SEIS*) contains more information on the potential impacts associated with other alternative reclaimed water satellite plant sites in the Hawks Prairie implementation area.

#### 4.1.1 Earth Resources

This section summarizes the potential impacts of construction and operation of a reclaimed water satellite plant at Site 3 to earth resources. Section 5.1.1 of the *2001 Final SEIS* contains more information on impacts to earth resources in the Hawks Prairie implementation area.

##### Site 3

Construction of a 1 million gallon per day (mgd) reclaimed water satellite plant will disturb approximately three acres during construction. Excavation volumes are estimated to be approximately 2,500 cubic yards, and construction activities are anticipated to last 15 to 18 months.

Erosion and minor sedimentation resulting from construction activities are more likely to impact Woodland Creek from this site than from Sites 1, 2 Center, and 2 West as it is located closer to Woodland Creek. The impacts to Woodland Creek from construction activities at Site 3

would be similar to those at Site 2 East, or possibly slightly reduced, and would not be anticipated to be significant. The stream is approximately 0.2 mile from the site at both locations, but the topography varies slightly. Site 2 East slopes toward the stream. Site 3 slopes gently toward the stream, and a forested buffer exists between the site's western boundary and the stream.

Operational impacts to earth-resources are not anticipated.

#### 4.1.2 Air Resources

This section summarizes the potential impacts of construction and operation of a reclaimed water satellite plant at Site 3 to air resources. Section 5.1.2 of the *2001 Final SEIS* contains more information on impacts to air resources in the Hawks Prairie implementation area.

##### Site 3

Construction impacts related to air quality and odors would be the same as for Sites 1, 2 East, 2 Center, and 2 West.

During construction, dust, vehicle emissions, and construction equipment emissions will occur at this site. Passing motorists, patrons of nearby commercial facilities, and some residences to the south of the site may detect construction-related odors at intermittent points during the construction period. Because these impacts would occur intermittently during allowable construction hours (between 7 a.m. and 9 p.m.) and for the period of construction only

(approximately 15 to 18 months), they are not anticipated to be significant.

Impacts to air quality following construction may include odors related to sewage breakdown and facility vehicle emissions. The reclaimed water satellite plant at Site 3 would be designed to handle only the liquid portion of the wastewater stream. Solids, which are potentially more odorous, would continue to be handled at the Budd Inlet Treatment Plant.

Odor emissions are most likely to occur during periods of increased ambient temperature and at points of turbulence within the collection and treatment processes. Impacts during periods of maximum odor production could negatively affect surrounding residents. The presence and direction of prevailing breezes and the proximity of homes to the reclaimed water satellite plant would influence the degree of impact, and could vary as weather patterns change throughout the year. The closest residences are approximately 350 feet from the property line, and are located uphill. These factors, along with appropriate facility design and operation will help to reduce the impact of odors to nearby residences.

Odors may also occur associated with the screenings and grit handling and transport; however, some of these functions may take place at the Martin Way Pump Station rather than the reclaimed water satellite plant site. These impacts are anticipated to be minor as the screenings and grit will be placed in enclosed containers prior to transport to a landfill facility.

#### **4.1.3 Surface Water Resources**

This section summarizes the potential impacts of construction and operation of a reclaimed water satellite plant at Site 3 to surface water resources. Section 5.1.3 of the *2001 Final SEIS* contains more information on impacts to surface water resources in the Hawks Prairie implementation area.

#### **Site 3**

Construction-related impacts associated with Site 3 are generally the same as those described for Sites 1, 2 East, 2 West, and 2 Center. Site 3 is approximately 0.2 mile from Woodland Creek. Because of this proximity, this site has potential for sediment to enter Woodland Creek; however, construction best management practices (BMPs) will minimize this potential. A pipeline will cross Woodland Creek, carrying wastewater from the Martin Way pump station to the site. The pipeline would either be constructed under Woodland Creek using trenchless technology (e.g., jack and bore, microtunnel), or constructed in the road shoulder prism.

The potential for long-term impacts to surface waters from development of a reclaimed water satellite plant at Site 3 is limited to increased runoff from impervious surfaces, and potential spills of treatment chemicals used on-site. Treated reclaimed water will be transported to one of the groundwater recharge/wetland polishing sites; reclaimed water will not be discharged at the site. Runoff from impervious surfaces associated with a new reclaimed water satellite plant will be controlled by a site specific runoff control plan which will be designed to reduce the peak volumes and control contaminants in surface runoff. The *Woodard and Woodland Creek Comprehensive Drainage Basin Plan* (Thurston County et. al., 1995) provides guidance regarding control of peak flows, flood protection, and enhancement of fish habitats. Release and cleanup of on-site chemicals will be managed under a site-specific spill response and control plan. Construction and operation of the facility will be consistent with the plans and policies outlined in the *Drainage and Erosion Control Manual for Lacey* (1994).

No construction-related or operational impacts to marine waters are anticipated.

#### 4.1.4 Groundwater Resources

This section summarizes the potential impacts of construction and operation of a reclaimed water satellite plant at Site 3 to groundwater resources. Section 5.1.4 of the *2001 Final SEIS* contains more information on impacts to groundwater resources in the Hawks Prairie implementation area.

##### Site 3

Construction of a reclaimed water satellite plant at Site 3 will have limited impact on groundwater resources in the immediate vicinity. Because reclaimed water will be conveyed to a groundwater recharge area or reuse site, there will be no operational impacts to groundwater at this site. The conditions at this site are similar to those described for Sites 1, 2 East, 2 Center, and 2 West.

#### 4.1.5 Biological Resources

This section summarizes the potential impacts of construction and operation of a reclaimed water satellite plant at Site 3 to biological resources. Section 5.1.5 of the *2001 Final SEIS* contains more information on impacts to biological resources in the Hawks Prairie implementation area.

##### Site 3

If a reclaimed water satellite plant were constructed at Site 3, the impacts to plants would be the loss of grasses, upland shrubs (predominantly Scot's broom and Himalayan blackberry), and possibly several evergreen trees including western red cedar and/or Douglas fir trees.

Wetland vegetation exists on site. Should this site be selected, a wetland survey will be conducted prior to design of the facility to precisely locate wetland boundaries and avoid potential impacts or identify mitigation measures in the event impacts occur.

Wildlife will most likely not be affected at Site 3. However, there is forest habitat to the west

and southeast of the site. Construction and operation of a reclaimed water satellite plant at Site 3 may affect wildlife (birds and small mammals) that uses this parcel as a corridor between the forested areas.

#### 4.1.6 Fish Resources

This section summarizes the potential impacts of construction and operation of a reclaimed water satellite plant at Site 3 to fish resources. Section 5.1.6 of the *2001 Final SEIS* contains more information on impacts to fish resources in the Hawks Prairie implementation area.

##### Site 3

Potential impacts to fish resources are associated with erosion and sedimentation resulting from construction activities, particularly from pipeline construction crossing streams. These impacts are anticipated to be minor.

Impacts to fish resources resulting from construction of a reclaimed water satellite plant on all proposed site locations are anticipated to be minor, including Site 3. Sediment may enter Woodland Creek during construction of the pipeline to the reclaimed water plant site; however, construction best management practices (BMPs) will minimize this potential.

#### 4.1.7 Shellfish Resources

This section summarizes the potential impacts of construction and operation of a reclaimed water satellite plant at Site 3 to shellfish resources. Section 5.1.7 of the *2001 Final SEIS* contains more information on impacts to shellfish resources in the Hawks Prairie implementation area.

Construction and/or operation of a reclaimed water satellite plant at all proposed site locations, including Site 3, will not impact shellfish resources in Henderson Inlet or the Nisqually Reach.

#### 4.1.8 Noise

This section summarizes the potential noise impacts of construction and operation of a reclaimed water satellite plant at Site 3 to noise. Section 5.1.8 of the *2001 Final SEIS* contains more information on impacts to noise resources in the Hawks Prairie implementation area.

##### Site 3

Construction-related impacts associated with Site 3 are generally the same as those described for Sites 1, 2 East, 2 West, and 2 Center. Reclaimed water satellite plant construction and operation would increase noise levels at receiving properties in the vicinity of Site 3. Construction-related noise impacts would include construction vehicles and equipment, clearing and grading, equipment and supply movement within the site, and voices from workers. The single-family residences to the south of the site may experience some noise-related disturbance during the allowable construction hours between 7 a.m. and 9 p.m. for the 15 to 18 month duration of the project. However, these residences are 350 feet or more from the site, and noise may be additionally buffered from them due to their uphill location from the site and the trees present between the residences and the site boundary.

The earthwork portion of the construction activities would likely be the most disturbing in terms of noise; these activities are anticipated to last approximately 3 to 4 weeks. During this period, dump trucks and backhoes would be the most common equipment. Active dump trucks typically produce noise in the 91 dB(A) range, and backhoes in the 85 dB(A) range. Other noises associated with earthwork activities will be back-up signals on the dump trucks and noise produced by the dumping of soil into dump truck beds. Due to the temporary nature of these activities and their restriction to daytime hours, impacts are not anticipated to be significant.

Following construction, noise related to the general operation of the reclaimed water satellite plant would include equipment and machinery, facility vehicles, and human voices. Residents

of the single-family homes located to the south of the site may be able to hear some of these operational noises. The most noticeable noise source is likely to be heavy trucks that would transport washed material from the reclaimed water satellite plant's screens and grit chambers to the Thurston County Waste and Recovery Center. Up to two truck trips per week are anticipated. Heavy truck noise (91 dB(A) at 50 feet) for the residents approximately 350 feet to the south of the site would be less than 73 to 79 dB(A). The impact of this noise would be mediated by the ambient traffic noise in the area (Martin Way East, Interstate 5) and the trees growing between the site and the residential properties. Due to the high level of commercial and personal vehicle traffic currently present in this predominantly commercial area, noise impacts related to operation are not anticipated to be significant. Operational noise levels will be consistent with City of Lacey standards.

#### 4.1.9 Land and Shoreline Use

This section summarizes the potential impacts of construction and operation of a reclaimed water satellite plant at Site 3 to land use. Section 5.1.9 of the *2001 Final SEIS* contains more information on land use impacts in the Hawks Prairie implementation area.

##### Site 3

The land use impacts for Site 3 are similar to those described for Sites 1, 2 East, 2 West, and 2 Center in Section 5.1.9 of the *2001 Final SEIS*.

Properties neighboring a reclaimed water satellite plant will be subject to short-term construction related air, noise, and traffic impacts. Similarly, properties adjacent to the alignments for the raw wastewater pipeline and solids return pipelines will have similar temporary impacts. Such impacts are discussed more thoroughly in the Air, Noise, and Traffic sections of this document and the *2001 Final SEIS*.

All of the alternative reclaimed water satellite plant sites, including Site 3, are located in areas

with some amount of nearby residential development. Site 3 is located in a predominately commercial area, zoned as CBD-7 (Central Business District). Residential development exists approximately 350 feet to the south of Site 3. Forested areas currently exist between the site and the residential area.

Unless properly mitigated, operational impacts from the plant, including odor, noise, and aesthetics could adversely affect neighboring properties and potentially result in reduced property values. Refer to the Air, Noise, and Aesthetics sections of this Addendum and the *2001 Final SEIS* for a more complete description of such impacts.

Under the Lacey Zoning Code, a special use permit would be required for any of the reclaimed water satellite plant alternative locations.

#### **4.1.10 Parks and Recreation**

This section summarizes the potential impacts of construction and operation of a reclaimed water satellite plant at Site 3 to parks and recreation. Section 5.1.10 of the *2001 Final SEIS* contains more information on impacts to parks and recreation in the Hawks Prairie implementation area.

##### **Site 3**

The parks and recreation impacts for Site 3 are similar to those described for Sites 1, 2 East, 2 West, and 2 Center in Section 5.1.10 of the *2001 Final SEIS*. No additional impacts are anticipated.

None of the reclaimed water satellite plant sites, including Site 3, would result in any significant impacts to park or recreation facilities during construction. None of the plant sites contain any park or recreation facilities, and there are no park or recreation facilities within the immediate vicinity of any of the sites.

The City of Lacey designates Martin Way East as a Class 2 bikeway. Construction traffic

traveling to and from the reclaimed water satellite plant site could temporarily disrupt bicycle traffic on this roadway, but disruption would be temporary and intermittent, and existing bike use on this road is low.

Over the long-term, the proposed reclaimed water satellite plant would not have any adverse impacts on parks and recreation facilities. The proposed sites would not directly displace or disturb any existing or planned recreational activities or facilities, and they would not directly or indirectly increase park and recreation demands beyond what is already projected in planned growth for the region. Traffic associated with plant operation would be intermittent and low, and would not affect bike use of existing roadways (see Section 4.1.13, Transportation, for additional information).

#### **4.1.11 Aesthetics and Visual Resources**

This section summarizes the potential impacts of construction and operation of a reclaimed water satellite plant at Site 3 to aesthetics and visual resources. Section 5.1.11 of the *2001 Final SEIS* contains more information on impacts to aesthetics and visual resources in the Hawks Prairie implementation area.

##### **Site 3**

Following construction, the overall visual impact of the site would change from a vacant lot to a landscaped property containing buildings, a management office, and parking area. The overall look of the site would be commercial/industrial in nature and would be similar to other commercial buildings in the vicinity. Since this site is located in a commercial area dominated by office structures; no visual impacts to other businesses or to passing vehicles are anticipated. The visual characteristics of the site will be altered for the residents to the south of the site. These residents are located on a hill above the site, and currently view a vacant weedy lot through a thin stand of trees. Due to the visual quality of the surrounding landscape and the lack of visual

amenities currently present on the site, visual impacts are not anticipated to be significant and in some individuals' viewpoint may be improved.

#### **4.1.12 Historic and Cultural Preservation**

This section summarizes the potential impacts of construction and operation of a reclaimed water satellite plant at Site 3 to historic and cultural resources. Section 5.1.12 of the *2001 Final SEIS* contains more information on impacts to historic and cultural resources in the Hawks Prairie implementation area.

##### **Site 3**

Site 3 has a high probability for unknown hunter-fisher-gatherer and ethnographic period archaeological resources, especially in the northern half of the parcel. There is a moderate probability for historic period archaeological resources associated with a former dairy farm. Ground disturbing construction activities may disturb unknown hunter-fisher-gatherer or historic period archaeological resources.

#### **4.1.13 Transportation**

This section summarizes the potential transportation impacts of construction and operation of a reclaimed water satellite plant at Site 3. Section 5.1.13 of the *2001 Final SEIS* contains more information on transportation impacts in the Hawks Prairie implementation area.

##### **Site 3**

The transportation impacts for Site 3 are similar to those described for Sites 1, 2 East, 2 West, and 2 Center in Section 5.1.13 of the *2001 Final SEIS*.

Construction of a reclaimed water satellite plant on any of the proposed sites would result in a temporary increase in construction-related traffic. Construction of a reclaimed water satellite plant is anticipated to last approximately 15 to 18 months. Construction traffic would include workers traveling to and from the site, delivery of materials and equipment to and from

the site, and import and export of cut and fill material. Travel and access to Site 3 is likely to occur via Martin Way East (Figure 1-1).

Each site would require some excavation and fill for construction, generating haul truck trips on local area roadways. Although the size of each site varies, projected excavation volumes and truck trips would be similar among all of the sites. Specifically, construction of a satellite treatment plant at any of the sites is expected to require approximately 850 truck trips, or an average of 2 to 3 truck trips per day during the 15 to 18 months of construction. This includes delivery and worker vehicles, and assumes a 19 cubic yard haul truck capacity with a truck "pony," and that construction will occur from Monday through Friday.

Construction of feed pipelines to and from the reclaimed water satellite plant Sites 3 could also result in some temporary traffic disruptions. Feed lines to Site 3 would result in closure of a single lane on the Martin Way East from the Martin Way pump station to the site. Construction of the reclaimed water pipeline would likely result in temporary lane closures along Martin Way East from the plant site to Carpenter Road, along Carpenter Road across Interstate 5 to Britton Parkway, and along Britton Parkway to Marvin Road (refer to Figure 1-1 for a depiction of the pipeline route). This construction could temporarily (a few days maximum) disturb access to businesses and residences adjacent to the construction.

Increased construction and haul truck traffic would be minor and temporary and would not substantially affect traffic in the vicinity of any of the sites.

Safety of pedestrians would also be of concern along construction haul routes during the construction period. Safety issues along Martin Way East would be minimized by existing and proposed sidewalks, which would separate pedestrians from roadway traffic.

Operation of the reclaimed water satellite plant would not generate substantial new amounts of

traffic. Overall, operation of a new plant would generate an estimated 3 to 5 trips per day for a variety of facility operations. Since existing roadway conditions are acceptable and plant-generated traffic would be minor, no significant transportation impacts would occur. Screenings and grit would be trucked off-site. For a 1 mgd facility, screenings would be trucked off-site once every 5 to 7 days. This would increase to approximately once every two days for a 5 mgd facility. Grit would be trucked off-site approximately once every 2 days at 5 mgd capacity. Traffic impacts associated with truck hauling from the site would be negligible.

#### **4.1.14 Public Services and Utilities**

This section summarizes the potential public services and utilities impacts of construction and operation of a reclaimed water satellite plant at Site 3. Section 5.1.13 of the *2001 Final SEIS* contains more information on public services and utilities impacts in the Hawks Prairie implementation area.

##### **Site 3**

The impacts to public services and utilities for Site 3 are similar to those described for Sites 1, 2 East, 2 West, and 2 Center in Section 5.1.13 of the *2001 Final SEIS*.

The raw wastewater supply pipeline and solids return pipeline for Site 3 would extend from the Martin Way Pump Station to Site 3. The pipelines would be constructed in the existing Martin Way East road right-of-way.

Short-duration, temporary disruptions (anticipated to be a few hours maximum) to utility services could potentially occur during construction of the aforementioned pipelines in road rights-of-way. In addition, traffic congestion in the immediate vicinity of construction areas could impede movement of fire and emergency response vehicles.

## **4.2 MITIGATION MEASURES**

This section describes the mitigation measures developed to reduce the identified environmental impacts. Most measures are applicable to all alternative reclaimed water satellite plant sites. Measures specific to alternative reclaimed water satellite plant Site 3 are also defined. The measures are further described in the *1998 Final SEIS* and the *2001 Final SEIS*.

### **4.2.1 Earth Resources**

Construction activities would be conducted in a manner consistent with the City of Lacey's clearing and grading requirements. Erosion and sedimentation control measures will be implemented during all construction activities. Stringent erosion control measures will be employed at the site boundaries to minimize the potential for off-site sediment transport.

To reduce construction-related erosion and sedimentation, a site-specific erosion and sedimentation control plan will be developed, which will include, at a minimum, the following measures:

- Expose soils only in the active construction area
- Install straw bales, silt fences, and/or geonetting around sensitive areas
- Cover stockpiled materials
- Revegetate the area promptly following construction

### **4.2.2 Air Resources**

Mitigation measures would be implemented to control dust and emissions related to construction and to control odors related to reclaimed water satellite plant operation.

Construction mitigation includes such measures as wetting exposed surfaces, washing vehicles prior to leaving the project site, and shutting off engines when not in use. Operation measures would include proper sizing of transport systems

and areas exposed to the atmosphere, servicing of odor control units, and chlorination.

Specific mitigation measures would include the following:

- The primary on-site mitigation for odor emissions will likely consist of a two-stage process. The preliminary treatment building will be ventilated and the biological batch reactors will be covered. Air drawn off these sources would first be treated via a chemical scrubber or a carbon treatment system. The chemical scrubber would use sodium hypochlorite; should the chemical scrubber be the primary treatment choice, the size of the hypochlorite storage tank would need to be increased to 8,000-9,000 gallons. The second stage of odor control would consist of either a biofilter or a virgin activated-carbon tower. The activated-carbon tower option would also require a stack to meet the desired odor requirement at the fence line.
- The reclaimed water satellite plant would be located to maximize the distance between the facility and the closest receptor(s).
- Screenings and grit would be placed in enclosed containers and transported off-site to minimize odors.

#### 4.2.3 Surface Water Resources

Mitigation measures at all reclaimed water satellite plant sites will be similar, and focus upon mitigating construction-related impacts. Site development goals, as provided in the *Woodland and Woodard Creek Comprehensive Drainage Basin Plan*, (Thurston County et al., 1995) for flood prevention, protection of water quality, and enhancement of fish habitat would be used as guidance during facility development.

##### Construction

Construction will occur in accordance with requirements in the City of Lacey *Development Guidelines* (1999). Measures to reduce construction-related impacts would include the

following elements: an erosion and sedimentation control plan, a construction spill prevention and response plan, and a restoration and revegetation plan. If site construction impacts a wetland, a wetland mitigation plan will also be required (refer to Section 4.2.5 for a discussion of wetlands). Key elements of these plans are outlined below. All construction activities will be conducted in accordance with permit conditions applied by the City of Lacey.

**Erosion and Sediment Control Plan.** This plan would be developed to prevent runoff of sediment and construction-related contaminants into drainageways, and particularly Woodland Creek. This plan would be developed consistent with the *Drainage and Erosion Control Manual for Lacey* (1994) requirements and include mapping of site topography, identification of land clearing and earth moving activities, identification and location of sediment and erosion control devices such as sediment walls and detention ponds, location and covering of spoils piles, storage of material, seasonal restriction for earth disturbing activities, provisions for modified operations in extremely wet weather, and monitoring and maintenance of erosion control facilities.

**Spill Prevention and Response Plan.** A spill prevention and response plan addresses potential spills of chemicals, typically petroleum-related materials, that could impact either ground or surface waters. Such a plan will be prepared in accordance with the City of Lacey requirements.

**Site Restoration and Revegetation Plan.** The purpose of this plan is to restore exposed soil areas to a vegetated condition as soon as practical following construction to prevent continuing erosion. This plan would specify the types of vegetation to be replanted, critical periods for replanting, and procedures for ensuring the vegetation becomes reestablished. This plan may be integrated with a landscaping plan for the site or may be included in the erosion control plan.

## Operation

A site drainage plan will be prepared to identify engineering structures to reduce the overall amount of impervious area and specific measures to reduce the impact of contaminants in runoff (e.g., sediment and oil trapping swales, maintenance procedures for parking areas, and storage of on-site chemicals or fuels).

### 4.2.4 Groundwater Resources

Mitigation measures outlined in the *2001 Final SEIS* to reduce construction-related impacts include treating water to Class A reclaimed water standards, conducting a site-specific review to determine the presence of contaminated soil and/or groundwater, scheduling construction during the summer months, and providing any necessary treatment to withdrawn groundwater prior to discharge. Additional measures have not been identified.

### 4.2.5 Biological Resources

Mitigation measures to reduce impacts to biological resources as a result of construction or operation of a reclaimed water satellite plant at Site 3 are discussed below. Refer to section 4.2.3 for a summary of surface water-related mitigation measures.

#### Site 3

Site 3 will be surveyed to determine the presence of wetlands. Wetland areas that are temporarily impacted during construction will be restored following construction at ratios prescribed by local regulations. Permanent wetland losses would be mitigated as mandated by applicable regulations, including the City of Lacey, the Washington Department of Ecology, and the U.S. Army Corps of Engineers, if applicable. If necessary, mitigation would be conducted off-site.

### 4.2.5 Fish Resources

Mitigation measures have not been developed because impacts to fish resources are not anticipated at Site 3.

### 4.2.7 Shellfish Resources

Mitigation measures have not been developed because impacts to fish resources are not anticipated at Site 3.

### 4.2.8 Noise

Mitigation measures for both construction and operation impacts from noise would be implemented as part of any alternative. Construction mitigation measures would include proper maintenance of equipment, limiting engine running, adherence to approved construction hours, use of attenuation barriers, and substitution of impact tools with less noisy tools. Construction and operational mitigation may also include the following specific measures:

- Construction Best Management Practices (BMPs) shall be employed to minimize noise impacts during construction hours.
- Construction will be strictly limited to City of Lacey allowable construction hours of 7 a.m. to 9 p.m.
- Noisy operations will be housed inside structures.
- Buildings that house equipment or machinery shall be insulated so as to absorb noise and buffer the outside environment from the sound source.
- Maintenance vehicles will be maintained in good working order to reduce noise.

Operational noise must meet appropriate environmental designation for noise abatement (EDNA) limits at property boundaries as set forth in the Thurston County Code (10.36 Public Disturbance Noise and 21.57.030 Lacey Urban

Growth Area Noise) and City of Lacey Code (16.57.030 Noise).

#### **4.2.9 Land and Shoreline Use**

Measures to reduce impacts to land and shoreline use include the following:

- Maintain access to all residential areas and commercial/industrial areas in the vicinity of pipeline construction to the extent possible.
- Locate all new pipelines in developed roadways or existing utility rights-of way to the extent feasible.
- Incorporate property line setbacks, screening vegetation, and muted colors in the design of reclaimed water satellite plants and groundwater recharge basins, particularly where such facilities would be located in proximity to residential areas.
- Pursue all opportunities to acquire property for facility sites from willing sellers before considering options for condemnation.
- Continue coordination with Thurston County and local jurisdictions to ensure the timely and equitable siting of reclaimed water satellite plants and groundwater recharge basins to serve projected growth.

#### **Site 3**

LOTT will notify potentially affected residents and business owners prior to commencing construction activities. Inconvenience to residents and business owners will be minimized to the extent practicable. Measures will be implemented to minimize noise and odors associated with operation of reclaimed water satellite plants. In addition, the reclaimed water satellite plant will be carefully designed to be visually compatible with surrounding land use in order to minimize any potential impacts on the value of adjacent or nearby properties.

#### **4.2.10 Parks and Recreation**

Measures to reduce recreational impacts include minimizing disruption of bike lanes along

Martin Way East, particularly at construction entrances to the site. Temporary lanes or detours will be provided.

#### **4.2.11 Aesthetics and Visual Resources**

Mitigation measures associated with visual and aesthetic impacts would include thoughtful facility placement, property line setbacks, vegetative screening or buffers, and design features that decrease facility visibility. LOTT would meet with the community to determine community values and aesthetic priorities for development of the site.

Reclaimed water satellite plant design would conform to surrounding structures in form, scale, and character. For example, a facility in a commercial area would be designed to appear indistinguishable from surrounding structures.

A vegetated buffer consisting of large evergreen trees is currently located between Site 3 and the residential properties to the south of the site. This buffer may be enhanced by plantings on the site around the facility.

#### **4.2.12 Historic and Cultural Preservation**

Mitigation measures to reduce or eliminate impacts to historic and cultural resources are discussed below.

#### **Site 3**

Mitigation for potential impacts to unknown hunter-fisher-gatherer and historic period archaeological resources include field reconnaissance and consultation with the Nisqually and Squaxin Island Tribes. A professional archaeologist should be retained to conduct field reconnaissance of the site prior to any ground disturbing construction activity, including geotechnical testing. If unknown archaeological resources are identified that may be significant, they would require evaluation and, if significant, mitigation through

consultation with the Office of Archaeology and Historic Preservation and the affected Tribes.

#### **4.2.13 Transportation**

Mitigation measures to reduce transportation-related impacts are discussed below.

Measures identified to mitigate impacts to transportation resources include the close coordination with affected jurisdictions and agencies to facilitate concurrent construction schedules with planned improvements to minimize disruption and reduce costs associated with impact fees. Traffic control plans will be developed for affected areas. In addition, emergency service providers will be notified in advance of construction activity of schedules and detour routes.

In accordance with 12.16.055 of the Lacey Municipal Code, close coordination should occur with the City of Lacey for payment of “disruption fees” for disruption to streets that have been improved within 5 years of project initiation.

Safety hazards should be minimized during construction by separating pedestrians from active truck haul routes and construction areas, including temporary relocation of school bus stops if necessary to ensure the safety of children.

#### **4.2.14 Public Services and Utilities**

Mitigation measures to reduce impacts to public services and utilities are discussed below.

- Existing local water and sewer lines would be identified through site-specific analyses to minimize any disruptions in service.
- LOTT would coordinate with local jurisdictions to ensure consistency between the Wastewater Resource Management Plan and local sewer and water comprehensive plans.

- Local grading and drainage ordinances as well as the Thurston County Drainage Manual would be complied with during design and construction of facilities.
- LOTT would collaborate with local fire and emergency service providers to minimize disruptions of responses during pipeline construction in roadways.
- Traffic control plans will be prepared to minimize any impacts on response times. Local fire and emergency service providers should be consulted during facility design and prior to construction.
- Local fire and emergency service providers would be consulted during planning and design of individual facilities to ensure that each site is accessible to fire and emergency vehicles.
- Energy efficiency measures would be incorporated into the design of proposed facilities.
- Puget Sound Energy would be consulted during site specific design regarding the potential for, and means to avoid, disruption of gas and electric service during construction activities.
- Cable television and telephone utilities would be consulted prior to any construction activities in an effort to reduce the potential for construction related interruptions in service. Locations of all underground utilities will be identified prior to construction.

### **4.3 SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS AND CUMULATIVE IMPACTS**

This section discusses significant unavoidable adverse impacts and cumulative impacts associated with a reclaimed water satellite plant at Site 3.

#### **4.3.1 Earth Resources**

No significant unavoidable adverse or cumulative impacts to earth resources are expected to occur.

#### **4.3.2 Air Resources**

No significant unavoidable adverse or cumulative impacts to air resources have been identified.

#### **4.3.3 Surface Water Resources**

Significant unavoidable adverse impacts and cumulative impacts to surface water resources are not anticipated from the construction of a reclaimed water satellite plant.

#### **4.3.4 Groundwater Resources**

No significant unavoidable adverse impacts to groundwater resources are expected as a result of any of the action alternatives.

#### **4.3.5 Biological Resources**

No significant unavoidable adverse or cumulative impacts to biological resources have been identified.

Cumulative impacts to vegetation, wetlands, wildlife, and sensitive species include conversion of upland habitat to impervious surface associated with construction of a new reclaimed water satellite plant and removal of a low-quality, potential wildlife corridor between two forested areas.

#### **4.3.6 Fish Resources**

No significant unavoidable adverse impacts or cumulative impacts to fish resources have been identified.

#### **4.3.7 Shellfish Resources**

Significant unavoidable adverse and cumulative shellfish impacts have not been identified

associated with the construction or operation of a reclaimed water satellite plant.

#### **4.3.8 Noise**

No significant unavoidable adverse impacts or cumulative impacts to noise have been identified.

#### **4.3.9 Land and Shoreline Use**

No significant unavoidable adverse impacts or cumulative impacts to land use have been identified.

#### **4.3.10 Parks and Recreation**

No significant unavoidable or cumulative parks and recreation impacts have been identified.

#### **4.3.11 Aesthetics and Visual Resources**

No significant unavoidable or cumulative aesthetic or visual impacts have been identified.

#### **4.3.12 Historic and Cultural Preservation**

No significant or cumulative historic and cultural impacts have been identified.

#### **4.3.13 Transportation**

No significant or cumulative transportation-related impacts have been identified.

#### **4.3.14 Public Services and Utilities**

No significant or cumulative historic and cultural preservation impacts have been identified during archival review and tribal consultation. Field reconnaissance is not expected to identify cultural resources that cannot be avoided or mitigated.

## REFERENCES

- Adolfson Associates, Inc. and Brown and Caldwell. June 2001. *Final Supplemental Environmental Impact Statement Hawks Prairie Reclaimed Water Project*. Prepared for LOTT Wastewater Alliance.
- Barnosky, Cathy W., Patricia M. Anderson, and Patrick J. Bartlein. 1987. Chapter 14: The Northwestern U.S. During Deglaciation; Vegetational History and Paleoclimatic Implications. In *The Geology of North America, Volume K-3: North America and Adjacent Oceans During the Last Deglaciation*, edited by W. F. Ruddiman and Herbert E. Wright, Jr., pp. 289-321. Geological Society of America, Boulder, Colorado.
- Brubaker, Linda B. 1991. Climate Change and the Origin of Old-Growth Douglas-Fir Forests in the Puget Sound Lowland. In *Wildlife and Vegetation of Unmanaged Douglas-Fir Forests*, edited by Leonard F. Ruggiero, Keith B. Aubry, Andrew B. Carey, and Mark F. Huff, pp. 17-24. U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station, General Technical Report PNW-GTR-285. Portland.
- City of Lacey. 1996. *Development Guidelines & Public Works Standards*.
- City of Lacey. 1996. *Zoning Ordinance for the Lacey Urban Growth Area*.
- Forsman, Leonard A., Martha B Lance, David R. Iversen, Dennis E. Lewarch and Lynn L. Larson. 2001. *Proposed Hawks Prairie Resource Management Basin Implementation Project Cultural Resources Overview City of Lacey and Unincorporated Thurston County, Thurston County, Washington*. LAAS Technical Report 2001-05. Larson Anthropological Archaeological Services Limited, Gig Harbor, Washington. Submitted to Adolfson Environmental Solutions, Seattle. Prepared for the LOTT Wastewater Partnership, Olympia, Washington.
- Garris, M. and C. Holstine. 1995. *Hawks Prairie Fast Lube/Espresso*. Historic Property Inventory Form, Field Site No. PS1-231. On file at the Washington State Office of Archaeology and Historic Preservation, Olympia.
- Gibbs, George. 1877. Tribes of Western Washington and Northwestern Oregon. *Contributions to North American Ethnology* 1(2):157-361. John Wesley Powell, editor. U.S. Geographical and Geological Survey of the Rocky Mountain Region. Reprinted. Shorey Books, Seattle, 1970.

- Hedlund, Gerald C. 1973. *Background and Archaeology of Inland Cultural Sites at Connell's Prairie, Washington (45PI44 and 45PI45)*. Green River Community College, Auburn, Washington.
- Hedlund, Gerald C. 1983. Location and Cultural Assessment of Archaeological Sites on the Enumclaw Plateau in the Southern Puget Sound Lowland. In *Prehistoric Places on the Southern Northwest Coast*, Thomas Burke Memorial Washington State Museum Research Report No. 4, University of Washington, Seattle.
- Lewarch, Dennis E., Leonard A. Forsman, David R. Iversen, Lynn L. Larson, Jeffrey R. Robbins, and Nancy A. Stenholm. 2000. *Data Recovery Excavations at the George Nelson Allotment Site (45KI450), King County, Washington*. LAAS Technical Report #2000-07. Larson Anthropological Archaeological Services Limited, Gig Harbor, Washington. Submitted to Muckleshoot Indian Tribe, Auburn, Washington.
- Metsker, Charles. 1925. *Metsker's Atlas of Thurston County, Washington*. Metsker Map Company, Tacoma.
- Norton, Helen H. 1979. *The Association Between Anthropogenic Prairies and Important Food Plants in Western Washington*. Northwest Anthropological Research Notes 18:175-200.
- Polk, R.L. 1924. *Polk's 1923-1924 City Directory of Thurston County*. R.L. Polk, Tacoma, Washington.
- Porter, Stephen C, and Terry W. Swanson. 1998. *Radiocarbon Age Constraints on Rates of Advance and Retreat of the Puget Lobe of the Cordilleran Ice Sheet during the Last Glaciation*. Quaternary Research 50:205-213.
- Simmonds, Julian Sam. 1927. Deposition of Julian Sam Simmonds. In *The Duwamish, Lummi, Whidby Island Skagit, Upper Skagit, Swinomish, Snoqualmie, Stillaguamish, Suquamish, Samish, Puyallup, Squaxin, Skokomish, Upper Chehalis, Muckleshoot, Nooksack, Chinook and San Juan Islands Tribes of Indians vs. the United States of America, Proceedings of the United States Court of Claims, Petition No. F-275*, pp. 211-214. On microfilm at Microforms and Newspapers, University of Washington Libraries, Seattle.
- Smith, Marian W. 1940. *The Puyallup-Nisqually*. Columbia University Contributions to Anthropology, Volume 32. Columbia University Press, New York.
- Thurston County Assessor. 2001 Aerial Photo of Tax Parcel 11815230900. Thurston County GeoData Center. Thurston County Assessor Web Site [www.thurston-assessor.org](http://www.thurston-assessor.org).
- Thurston County Environmental Health Division. 1989. *Woodland and Woodard Creek Basins Stormwater Quality Survey. Final Report*.
- Thurston County Parks and Recreation Department. 1996. *Thurston County Comprehensive Parks, Recreation, Preserve, and Trails Plan 2015*.

Thurston County, City of Lacey, City of Olympia. 1995. *Woodland and Woodard Creek Comprehensive Drainage Basin Plan*. Final Draft.

United States Geological Survey. 1937. *Olympia Quadrangle*. United States Geological Survey, Reston, Virginia.

United States Surveyor General. 1853. General Land Office Survey Notes, Township 18 North, Range 1 West, Willamette Meridian. Washington State Department of Natural Resources, Olympia.

Whitlock, Cathy. 1992 *Vegetational and Climatic History of the Pacific Northwest during the Last 20,000 Years: Implications for Understanding Present-Day Biodiversity*. *The Northwest Environmental Journal* 8:5-28.

Williams, R. Walter, Richard M. Laramie, and James J. Ames. 1975. *Catalog of Washington Streams and Salmon Utilization, Volume 1, Puget Sound Region*. Washington State Department of Fisheries, Olympia.