Final Environmental Impact Statement

BRIGHTWATER REGIONAL WASTEWATER TREATMENT SYSTEM

November 2003

Brightwater
TREATMENT SYSTEM

King County
Department of Natural Resources and Parks
Wastewater Treatment Division

VOLUME 12

Responses to Comments on the Draft EIS
(Cities and Towns, Sewer and Water Districts, Other Governmental Entities)

A large map of the system alternatives evaluated in this Final EIS can be found in the inside back cover of Volume 1.

This information is available in alternative formats upon request by calling 206-684-1280 (voice) or Relay Service 711 (TTY).

King County Brightwater TREATMENT SYSTEM

Final Environmental Impact Statement for the Brightwater Regional Wastewater Treatment System

Volume 12

November 2003

Prepared in compliance with the State Environmental Policy Act (SEPA) (RCW 43.21C), the SEPA Rules (WAC 197-11) and Chapter 20.44 King County Code, implementing SEPA in King County procedures.

King County

Department of Natural Resources and Parks

Wastewater Treatment Division
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Acronyms and Abbreviations

AAF	average annual flow
AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
ADR	Architectural Design Criteria
ADWF	average dry-weather flow
ADT	average daily traffic
ANSI	American National Standards Institute
APT	advanced primary treatment
AR	aquatic resource
ASIL	ambient source impact level
ASP	amnesic shellfish poisoning
ASTM	American Society for Testing and Materials
AWDT	average weekday traffic
AWT	advanced wastewater treatment
AWWF	average wet-weather flow
BACT	best available control technology
BASTE	Bay Area Sewage Toxics Emission model
BETX	Xylenes (benzene, ethyl benzene, toluene, and zylene)
bgs	below ground surface
BMP	best management practice
BNSF	Burlington Northern-Santa Fe (railway)
BOD	biochemical oxygen demand
BPA	Bonneville Power Administration
BRHL	Bothell Registry of Historic Landmarks
bsp	atmospheric particles (by nephelometer)

CAA	Clean Air Act (federal)
CAO	Critical Area Ordinance
CATAD	computer augmented treatment and disposal system
CAS	conventional activated sludge
CCTV	cable connected television camera
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
cfm	cubic feet per minute
CFR	Code of Federal Regulations
cfs	cubic feet per second
CFU	coliform units
City Light	Seattle City Light
CO	carbon monoxide
COD	chemical oxygen demand
COE	U.S. Army Corps of Engineers
CPP	Countywide Planning Policy
CSO	combined sewer overflow
CU	conditional use
CUP	conditional use permit
CVSSA	Cross Valley Sole Source Aquifer
CVWD	Cross Valley Water District
CWA	Clean Water Act (federal)
cy	cubic yard
CZMA	Coastal Zone Management Act
DAF	dissolved air flotation
dBA	decibel, A-weighted
DDES	King County Department of Development and Environmental Services
DEQ	detailed evaluation question
DNRP	King County Department of Natural Resources and Parks

DO	dissolved oxygen
DOH	Department of Health (Washington State)
DPS	distinct population segment
D/T	dilution to threshold
du	dwelling unit
EAC	Executive Advisory Committee
Ecology	Washington State Department of Ecology
ECDC	Edmonds Community Development Code
EEM	estuarine emergent wetland
EFH	Essential Fish Habitat
EIS	environmental impact statement
EPA	U.S. Environmental Protection Agency
EPF	essential public facility
ESA	Endangered Species Act
ESC	erosion and sediment control
ESI	Eastside Interceptor
E2EM	intertidal emergent
ETS	Effluent Transfer System
FERC	Federal Energy Regulatory Commission
FHWA	Federal Highway Administration
FPA	Forest Practices Act
FS	freeway service
FTA	Federal Transit Administration
FTE	full-time employee
FWPCA	Federal Water Pollution Control Act
GBT	gravity belt thickener
GIS	geographic information system
GMA	Growth Management Act (Washington State)

GMA Board	Central Puget Sound Growth Management Hearings Board
gpd	gallons per day
gpm	gallons per minute
H_2S	hydrogen sulfide
HABS/HAER	Historic American Buildings Survey/Historic American Engineering Record
HAP	hazardous air pollutant
HCP	Habitat Conservation Plan
HDPE	high density polyethylene
HI	heavy industrial
HMP	Habitat Management Plan
HMMP	Hazardous Materials Management Plan
HOV	high occupancy vehicle
hp	horsepower
HPA	Hydraulic Project Approval
HPO	high purity oxygen
HVAC	heating, ventilation, and cooling
HWTM	Hazardous Waste Technical Memorandum
IBC	International Building Code
IDA	International Dark-Sky Association
IDLH	Immediately Dangerous to Life or Health
IESNA	Illuminating Engineering Society of North America
I/I	infiltration/inflow
IPS	influent pump station
IRIS	Integrated Risk Information System
ISO	International Organization for Standardization
ITE	Institute of Transportation Engineers
KCC	King County Code
KCLL	King County Landmarks List

kV	kilovolt
kWh	kilowatt-hour
L_{eq}	maximum hour continuous equivalent level
L_{50}	mean value of a noise level over a 1-hour monitoring period
LI	light industrial
LID	low-impact development
L1OW	lacustrine limnetic open water
LOS	level of service
L2OW	lacustrine littoral open water
MACT	maximum achievable control technology
MBR	membrane bioreactor
Metro	Municipality of Metropolitan Seattle or King County Department of Metropolitan Services
mgd	millions gallons per day
mg/L	milligrams per liter
MLLW	mean lower low water
MMPA	Marine Mammal Protection Act
MOSS	Marine Outfall Siting Study
MPA	Marine Protected Area
MSA	Magnuson-Stevens Fishery Conservation and Management Act
MSL	mean sea level
MTBM	microtunnel boring machine
MTCA	Model Toxics Control Act
MTP	Metropolitan Transportation Plan
MVM	million vehicle miles
MW	megawatt
MWh	megawatt hour
MWPAAC	Metropolitan Water Pollution Abatement Advisory Committee
MWWF	maximum wet weather flow

NAAQS	National Ambient Air Quality Standards
NCP	National Contingency Plan
NEPA	National Environmental Policy Act
NESHAPS	National Emissions Standards for Hazardous Air Pollutants
NGVD	National Geodetic Vertical Datum
NHPA	National Historic Preservation Act
NIOSH	National Institute for Occupational Safety and Health
NOAA	National Oceanic and Atmospheric Administration (formerly NMFS—National Marine Fisheries Service)
NOC	Notice of Construction permit
NO_x	nitrous oxides
NPDES	National Pollutant Discharge Elimination System
NPPC	Northwest Power Planning Council
NRDA	Natural Resource Damage Assessment
NRHP	National Register of Historic Places
NTP	north treatment plant
NTU	nephelometric turbidity unit
O_3	ozone
OAHP	Office of Archeology and Historic Preservation (Washington State)
OCD	Washington State Department of Natural Resources
OHW	ordinary high water mark
OMP	RWSP Operational Master Plan
OSHA	Occupational Health and Safety Act
PAH	polycyclic aromatic hydrocarbon
PBT	persistent, bioacculmulative, and toxic
PCB	polychlorinated biphenyl
PEEP	Pooled Emission Estimation Program
PEM	palustrine emergent wetland

PFO	palustrine forest wetland
PHS	Priority Habitats and Species Program
PM	particulate matter
POTW	publicly owned treatment works
POW	palustrine open water wetland
ppbV	parts per billion by volume
ppm	parts per million
PPV	peak particle velocity
PSA	portal siting area
PSAMP	Puget Sound Ambient Monitoring Program
PS Clean Air	Puget Sound Clean Air Agency
PSD	Prevention of Significant Deterioration permit
PSE	Puget Sound Energy
psi	pounds per square inch
psig	pounds per square inch gauge
PSP	paralytic shellfish poisoning
PSRC	Puget Sound Regional Council
PSS	palustrine scrub shrub wetland
PSWQAT	Puget Sound Water Quality Action Team
PUD	public utility district
QA/QC	quality assurance/quality control
RCE	residential customer equivalent
RCRA	Resource Conservation and Recovery Act
RCW	Revised Code of Washington
R4SB	riverine intermittent
RI	remedial investigation
RI/FS	remedial investigation/feasibility study
RMS	root mean square
ROV	remotely operated vehicle

ROW	right-of-way
RTA	Regional Transit Authority
R3SB	riverine upper perennial
R2UB	riverine unconsolidated bottom
R2SB	riverine lower perennial
RWQC	King County Regional Water Quality Committee
RWSP	Regional Wastewater Services Plan
SARS	severe acute respiratory syndrome
SCADA	Supervisory Control and Data Acquisition System
SCC	Snohomish County Code
SCCRI	Snohomish County Cultural Resources Inventory
SCHRI	Snohomish County Historic Resources Inventory
SCS	Soil Conservation Service
SCT	Snohomish County Tomorrow
SEPA	State Environmental Policy Act
the Services	NOAA Fisheries and U.S. Fish and Wildlife Service
SGMP	Seattle Area Geologic Mapping Project
SIP	State Implementation Plan
SLS&E	Seattle, Lake Shore and Eastern (railroad)
SMA	Shoreline Management Act
SMP	Shoreline Master Program
SMS	Sediment Management Standards (Washington State)
SPCC	Spill Prevention, Control, and Countermeasures
SPCCP	Spill Prevention, Control, and Countermeasures Plan
SPT	Standard Penetration Test
SPU	Seattle Public Utilities
SQER	small quantity emission rate
SR	state route
SS	suspended solids
SSO	sanitary sewer overflow

SWD	Seattle Water Department
SWIFZ	South Whidbey Island Fault Zone
SWPPP	Storm Water Pollution Prevention Plan
TAC	toxic air contaminant
TAP	toxic air pollutant
TBM	tunnel boring machine
TMDL	total maximum daily loading
TMP	Traffic Management Plan
TPH	total petroleum hydrocarbon
tpy	tons per year
TSP	total suspended particulate matter
TSS	total suspended solids
$\mu g/m^3$	micrograms per cubic meter
UFC	Uniform Fire Code
UBC	Uniform Building Code
UGA	Urban Growth Area
USDA	U.S. Department of Agriculture
USDOT	U.S. Department of Transportation
USFS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	underground storage tank
USWB	U.S. Weather Bureau
UV	ultraviolet light
VOC	volatile organic compound
VS	volatile solid
WA DNR	Washington State Department of Natural Resources
WAC	Washington Administrative Code

WARM	Washington Ranking Method
WDFW	Washington State Department of Fish and Wildlife
WHO	World Health Organization
WHR	Washington Heritage Register
WISHA	Washington Industrial Safety and Health Act
WLA	wasteload allocation
WRIA	Water Resource Inventory Area
WSDOT	Washington State Department of Transportation
WTD	King County Wastewater Treatment Division
WWHM	Western Washington Hydrological Model
WWTP	wastewater treatment plant
ZID	zone of initial dilution

FINAL
ENVIRONMENTAL
IMPACT STATEMENT

Brightwater
Regional Wastewater
Treatment System

COMMENTS AND RESPONSES

CITIES AND TOWNS

C2
CITY OF BOTHELL

FINAL
ENVIRONMENTAL
IMPACT STATEMENT

Brightwater
Regional Wastewater
Treatment System

COMMENTS AND RESPONSES

City of Bothell

RECEIVED
JAN 23 2003
ENVIRONMENTAL PLANNING DIVISION

January 21, 2003

Don Theiler, Manager and SEPA Responsible Official
Environmental Planning
King County Wastewater Treatment Division
King Street Center: KSC-NR-0505
201 South Jackson Street
Seattle, WA 98104-9972

RE: Brightwater Treatment System
Response to the Draft Environmental Impact Statement Summary

Dear Mr. Theiler:

The City of Bothell recognizes the need for additional public facilities to serve the growing communities in the Puget Sound Area. The Brightwater project holds the potential to positively impact the area it is intended to serve by providing a safe and reliable method of wastewater treatment and disposal. Not surprisingly, a project of this magnitude will also have adverse impacts on the community in which it is ultimately constructed, and those communities through which the conveyance systems are built and operated. Communities such as Bothell will be directly and indirectly impacted by the construction and ongoing operation of the facilities constructed. The City applauds King County's efforts to take this into consideration in the design and development of the plant and conveyance systems.

C2-1 The City of Bothell will host a portion of the conveyance system under any action alternative under consideration and is in relatively close proximity to the treatment plant under two of the action alternatives considered. As a result, Bothell residents and businesses will be impacted, to varying degrees depending on the alternative selected, by the construction and operation of this project. The City of Bothell will require that the construction, ongoing operational, and community impacts of the project on its citizens be fully mitigated.

This letter attempts to address, in broad fashion, the concerns that the City has that will need to be addressed throughout the alternative evaluation, facility design, permitting process and ongoing operation of the Brightwater treatment plant and conveyance system operation. However, it should be noted that the City of Bothell does not have within its means the ability to fully assess the impacts from construction through operation, together with the square footage imprint of the facilities and length of conveyance pipes.

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Municipal Court
10116 NE 183rd Street
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Fax: 488-3052

Response to Comment C2-1

The Final EIS discloses impacts to a variety of elements of the natural and built environment. It also includes jurisdiction-specific impacts and mitigation to address identified impacts where appropriate.

Letter to Don Theiler, Manager and SEPA Responsible Official
Page 2
January 21, 2003

Alternative Selection:

C2-2 Of the three remaining action alternatives, the Unocal System Alternative appears to have the least impact to the City of Bothell while providing the same service and treatment ability. This alternative requires the installation of 11.6 miles of pipe ranging form 6 to 14 feet in diameter, while the two Route 9 alternatives require the installation of slightly over 20 miles of 14 ft. diameter pipe. In that the proposed Edmonds site is smaller and offers significant constraints, facility design will require greater innovation and likely more expense for the treatment plant portion of the project, however, the savings attained with installation of only half the amount of conveyance pipe as the other action alternatives represents a significant savings. The City of Bothell realizes there are many criteria on which the alternatives are being analyzed and wants to emphasize that the final decision should be based on sound technical evaluation of the three action alternatives being considered.

Based on our review of the DEIS for the project, the City offers the following comments and concerns regarding the design, construction and operation of the Brightwater Treatment Facility:

Traffic:

C2-3 A traffic plan will be required by the City of Bothell that will address, at a minimum, the following issues:

- Necessary time of day restrictions to mitigate impacts to congested streets.
- Mitigation for damage to streets from construction traffic will be required.
- Necessary improvements to street network to mitigate traffic impacts
- Traffic routing plan minimizing impacts to traffic circulation
- Cleanup of City streets along haul routes, methods of truck cleaning such as the installation of wash pads shall be used at the construction sites to keep this need to a minimum.
- Prevention of release of airborne matters and odor during hauling
- Emergency response impacts may result from localized construction activities and increased truck traffic.

C2-4 In addressing the traffic impacts the impacts on other major projects in the area must be addressed. At a minimum the following major projects will be under construction during the same time period as Brightwater:

- South Access-the new connection between SR-522 and the University Campus. This will entail the widening and reconstruction of SR 522 in this area.
- University of Washington-once certain mitigations such as the South Access project are underway the University of Washington will proceed with the build-out of the campus.
- SR-522 Multi-Modal Corridor Project-The City of Bothell in conjunction with Sound Transit will be reconstructing portions of SR-522 to accommodate BAT lanes and other general improvements
- I-405-future widening of I-405

Response to Comment C2-2

The King County Executive's decision will be based on a number of factors, including the information in the EIS and additional technical, community, cost, and policy considerations.

Response to Comment C2-3

A traffic management plan (TMP) addressing mitigation measures was prepared for all agencies affected by construction and is included in the Final EIS. This plan would includes time-of-day restrictions, necessary improvements to the roadway network, types of closures, pedestrian and bicycle detours, traffic routing/circulation management, and traffic control measures for safety on the affected roadways. These measures are being coordinated with affected agencies and finalized by King County during permitting. In addition, the TMP includes time-of-day restrictions, monitoring and restoration of streets to pre-construction conditions, provisions for emergency services access, and directs the movement of employees, equipment, and materials to reduce impacts along project traffic corridors.

Response to Comment C2-4

The list of projects identified in the comment letter from the City of Bothell, dated January 21, 2003, has been reviewed to assess potential impacts to those projects. The impacts of these projects have been reflected in the cumulative analysis of Brightwater project traffic during construction. Results of this analysis are included in Chapter 16 of the Final EIS.

King County is proposing to develop a traffic management plan (TMP) to address mitigation of traffic impacts during construction of the Brightwater Treatment Plant project. In that plan, King County would formally identify other major projects that would be under construction during the same time period. King County would coordinate construction

traffic activities with these other projects to ensure reasonable traffic operations.

Letter to Don Theiler, Manager and SEPA Responsible Official
Page 3
January 21, 2003

Noise:

C2-5 The exact noise impacts (level and duration) will be provided to the City of Bothell in order to determine any necessary time restrictions and/or other mitigations to lessen the impact.

Cut and Cover areas:

C2-6 Portions of the pipe network will be installed using normal excavation and backfill procedures. Any portion along a street classified as a collector or above may require time restrictions on work hours, detours or other mitigation. Such work will require complete restoration at the end of the work day or a suitable detour.

Vibration:

C2-7 With a project of this magnitude and duration, the City is unable to assess the impacts from vibrations, both construction and operation. However, impacts must be mitigated.

Impact to City Right of Ways and Private Properties:

C2-8 Tunneling proposed through Bothell ranges from 40 to 250 feet in depth. These are large diameter bores underneath our City spanning City right-of-ways and private property. Depending on the depth and conditions encountered this operation may have short and long term impacts to City infrastructure and private property impacting the value.

Water Quality:

C2-9 The City is insistent that surface water quality not be adversely impacted in any manner; as such a water quality plan will need to be incorporated into the project that insures the protection of aquifers, streams, wetlands and other bodies of water within the City

Air Quality/Odor:

With a project of this magnitude and duration, there will be a direct impact from construction and operation of the actual Brightwater site, conveyance and portal sites, and from the trucks relating to increased airborne matters in the air.

C2-10 The City proposes that the County consider a post construction monitoring plan to ensure that the system is working as designed and that there is no air quality impacts emanating from any of the facilities or any operation associated with the facilities. The plan must include an ongoing maintenance program to ensure that the success of controlling the odor is an ongoing element of the operation.

C2-11 The long term traffic effect from the treatment plant, pump stations, portals and other facilities needs to be assessed in greater detail.

Response to Comment C2-5

Operational noise levels from the Brightwater facilities would meet the applicable code requirements of the jurisdictions in which the facilities are located. Construction noise impacts and mitigation are discussed in greater detail in the Final EIS. Each of the primary portal siting locations is discussed with respect to existing conditions and potential noise and vibration impacts; proposed noise and vibration mitigation is specified for each. King County will coordinate closely with the city of Bothell regarding their specific noise requirements during construction.

Response to Comment C2-6

Please refer to the response to Comment C2-3 of this letter. The Brightwater construction activities would follow Bothell code and procedures.

Response to Comment C2-7

If the City of Bothell is the host community for any portals, it will have the opportunity to comment on and discuss mitigation measures during permitting.

Response to Comment C2-8

King County will be acquiring the necessary easements at fair market value for the project.

Response to Comment C2-9

Per requirements of the Individual NPDES Construction Stormwater Permit, a Stormwater Pollution Prevention Plan (SWPPP) would be developed that would outline erosion and sediment control BMPs and water quality monitoring during construction for the conveyance facility. The Brightwater project would also consider the guidelines set forth in the Washington State Department of Ecology's *Stormwater Management Manual for Western Washington* (August 2001), and would utilize stormwater treatment facilities at each portal. King County Department of Natural Resources is

planning to continue its ongoing water quality monitoring program, which includes monthly monitoring of stations on Little Bear Creek, North Creek, Swamp Creek, McAleer Creek, and Lyon Creek (refer to the program Web site at http://dnr.metrokc.gov/wlr/waterres/streams/creekindex.htm).

Construction of the conveyance system of the Brightwater project would also meet or exceed state Surface Water Quality Standards (Chapter 173-201A WAC) in receiving waters. The location of the portal sites would be such that impacts to high quality natural resources would be avoided to the greatest extent possible. Construction methods and BMPs would be used to minimize impacts to groundwater and aquifers, including the Cross Valley Aquifer. Please refer to the response to the Washington State Department of Ecology, Comments W5-4 and W5-8. Please refer to Appendices 6-C, Management of Water Quality During Construction at the Treatment Plant Sites, 6-D, Permanent Stormwater Management at the Treatment Plant Sites, and 6-F, Groundwater and Stormwater Management at the Candidate Portal Sites, of the Final EIS.

Response to Comment C2-10

Please refer to the response to the Washington State Department of Transportation, Comment W2-5, about post-construction monitoring of odors, as well as the section on Monitoring Effectiveness of Odor Prevention System, in Appendix 5-A, Odor and Air Quality: Treatment Plant.

Response to Comment C2-11

A more detailed analysis of traffic impacts at portals, pump stations, and treatment plant sites, during operations and management conditions has been completed, and is included in Appendix 16-B, Transportation Impact: Plant Sites and Conveyance.

Letter to Don Theiler, Manager and SEPA Responsible Official
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Spill Response:

C2-12 The maintenance and operations plan will be reviewed and commented on by the City of Bothell at the time of its completion.

Aesthetics:

C2-13 With the potential for multiple portal sites within the City of Bothell under any three of the action alternatives, the City is concerned about the aesthetics of the surface facilities along the selected route for the conveyance system. The York Pump Station in Redmond and the North Creek Pump Station in Bothell are attractive facilities that fit into the neighboring environment. The City of Bothell expects the same attention to the facilities along the selected route for the conveyance system. The mitigation should include not only architectural elements, but also should incorporate such items as landscaping, public art, trails, sports fields and other appropriate amenities. There appear to be a number of opportunities for partnering between the City and County to mitigate the location of these facilities.

Taxation Impacts

C2-14 Use of privately owned property within the City for public purposes, renders it unusable for the purpose of generating property taxes or other taxes imposed by the City, the loss of long-term and short-term tax revenue to the City and citizens must be mitigated.

Ongoing Assessment of Impacts:

C2-15 The City of Bothell expects to be involved during the development of the project in order to keep abreast of the impacts and their mitigation. It may be necessary for the City of Bothell to hire additional staff or retain consulting services to independently track, evaluate and address these impacts. This is also true for the permitting process (grading, right-of-way, building, etc.) and construction monitoring. Any such additional costs will be the responsibility of King County. It is Bothell's intent to negotiate this resource contribution with King County as early in the process as possible.

C2-16 Impacts of the entire project on the City of Bothell will be considered, not only the portion within its City limits. It is important to note that it is Bothell's expectation that along with the impacts mentioned above, King County will also work with each affected jurisdiction, including Bothell, to recognize the "community impacts" of the project. Bothell is aware that according to adopted King County Ordinances, the set aside for this community impact is 10% of the project cost. We look forward to working on all of these issues with appropriate King County staff and elected officials.

Response to Comment C2-12

King County will continue to work with affected jurisdictions, including the City of Bothell, to address not only construction-related concerns, but operations and maintenance as well.

Response to Comment C2-13

Refinements in the project design have reduced the number of primary portal sites along the conveyance corridors. Chapter 12 of the Final EIS includes additional detail on aesthetic impacts and mitigation for the conveyance system. This includes a description of the types of structures that may or may not appear on specific portal sites and sketches demonstrating example mitigation approaches for the types of aesthetic environments found along the conveyance route. During the design and permitting phases of the project, King County will work with the local communities and jurisdictions to develop detailed mitigation and design specific to each selected portal site. Please refer to the response to the City of Shoreline, Comment C6-5.

Response to Comment C2-14

The Draft EIS and Final EIS identified, for each element of the environment evaluated, probable significant adverse environmental impacts and reasonable mitigation measures. The EIS analyzes environmental impacts (WAC 197-11-448). City taxes and revenues were not an element discussed in the Draft EIS and will not be addressed as part of the Final EIS, as it is not an environmental impact.

Response to Comment C2-15

King County will be working closely with the City of Bothell through the permitting, construction, and monitoring process. For additional information, please refer to the response to the City of Shoreline, Comment C6-5, regarding mitigation suggestions.

Letter to Don Theiler, Manager and SEPA Responsible Official
Page 5
January 21, 2003

The City appreciates the effort King County has put forward in communicating the project scope and potential impacts to Bothell residents. We encourage the County to continue those efforts as the project proceeds, and welcome the opportunity to work with the County in this effort,

Again, the City of Bothell applauds King County officials for their foresight in seeing the need for this project, and their courage for moving it forward. We look forward to working with County officials in addressing the impacts raised herein, and others that may arise during the course of the project.

Sincerely

James V. Thompson
City Manager

JT/GS:da

cc: Mayor and Council
Shirley Marroquin, King County Brightwater Environmental Coordinator
Manny Ocampo, Assistant City Manager
Dave Zabell, Director of Public Works
Bill Wiselogle, Director of Community Development

Response to Comment C2-16

King County is working closely with all jurisdictions affected by the Brightwater project. The County is also interested in working across jurisdiction boundaries to coordinate aspects of the project and mitigation, where possible. For more information, please refer to the response to the City of Shoreline, Comment C6-5, regarding mitigation suggestions.

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C8
CITY OF BOTHELL—
TRANSPORTATION DIVISION

FINAL
ENVIRONMENTAL
IMPACT STATEMENT

Brightwater
Regional Wastewater
Treatment System

COMMENTS AND RESPONSES

RECEIVED
JAN 31 2003
ENVIRONMENTAL
PLANNING DIVISION

-----Original Message-----
From: Seyed Safavian [mailto:Seyed.Safavian@ci.bothell.wa.us]
Sent: Friday, January 31, 2003 4:20 PM
To: Brightwater@metrokc.gov
Cc: Dave Zabell; Gary Hasseler; Gary Sund
Subject: Brightwater EIS Comments

C8-1 Please be advised that the city's transportation Division staff has conducted a preliminary review of the above-mentioned document and has determined that report at this point does not contain adequate technical information for the city staff to adequately evaluate potential impacts of the project on the Bothell's transportation system.

We would also like to take this opportunity to express our appreciation for allowing us to review the document. We hope to be able to receive additional information so we would be able to conduct necessary analysis and evaluation of the project impacts as well as determination of potential project mitigation which might be needed to address our concerns.

Response to Comment C8-1

Additional detailed analyses of construction traffic related to specific portal locations have been included in Chapter 16 of the Final EIS and construction traffic routes and traffic impacts were identified. Please refer to Appendix 16-B, Transportation Impact: Plant Sites and Conveyance, for greater detail on proposed mitigation of construction impacts.

Following issuance of the Final EIS and a decision by the King County Executive on the location of the System, King County will provide any additional details and analysis needed by the City of Bothell as part of the permit review process.

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C9
CITY OF EDMONDS

FINAL ENVIRONMENTAL IMPACT STATEMENT

Brightwater Regional Wastewater Treatment System

COMMENTS AND RESPONSES

CITY OF EDMONDS
121 5TH AVENUE NORTH • EDMONDS, WA 98020 • (425) 771-0220 • FAX (425) 771-0221
Website: www.ci.edmonds.wa.us
DEVELOPMENT SERVICES DEPARTMENT
Planning • Building • Engineering

GARY HAAKENSON
MAYOR

Inc. 1890

February 3, 2003

Don Theiler, Manager
Environmental Planning
King County Wastewater Treatment Division
201 South Jackson Street, KCS-NR-0505
Seattle, WA 98104-3588

Subject: **City of Edmonds Comments on the Brightwater Regional Treatment System Draft Environmental Impact Statement**

Dear Mr. Theiler:

Thank you for the opportunity to review the Brightwater Regional Wastewater Treatment System Draft Environmental Impact Statement (DEIS).

In this review, the City of Edmonds has focused on those elements of the DEIS that have primary significance for the City. Specifically, much attention has been given to the DEIS's analysis of the Unocal treatment facility and its associated outfall, the two subalternatives, the three conveyance corridor alternatives, and the impacts and mitigations associated with Portals 23, 22, 24, and 3.

General Impressions/Overall Opinion:

C9-1 The current draft document is extremely general in its project descriptions and vague in describing the actual mitigation measures that will be used to mitigate resultant environmental impacts. Because the current DEIS is a product of these generalities, the City of Edmonds expects that any additional study of the Unocal site will result in more detailed information and potential impacts, as well as resultant mitigation measures. The level of detail in the DEIS is insufficient to meet the requirements of local permit processing. The deficiencies identified within this letter should be properly evaluated at the appropriate time through supplemental EIS documents in order to provide affected parties with adequate notice and opportunity to comment.

C9-2

C9-3

C9-4 We also disagree with the alternatives that are evaluated, in that the truly appropriate and viable alternatives are not clearly weighed against each other in the analysis contained in the DEIS. Our principal concern here is that the DEIS does not adequately consider other regional facilities in its analysis, most notably the Edmonds Crossing multimodal project

• *Incorporated August 11, 1890* •
Sister City - Hekinan, Japan

Response to Comment C9-1

Please refer to the response to the Washington State Department of Natural Resources, Comment W3-2.

Response to Comment C9-2

The Draft EIS is, under SEPA, a preliminary evaluation. Under SEPA and in this instance, the Final EIS responds to Draft EIS comments and contains more detailed information and analysis of the probable significant impacts of identified Brightwater alternatives, as well as reasonable mitigation measures. This EIS, upon completion, should provide the needed SEPA analysis for local project permits and approvals. It is anticipated that the permit process in various jurisdictions and with regulatory agencies will require, in some instances, significant additional analysis and work associated with preparation of permit applications and the permit review process

Response to Comment C9-3

Please refer to the response to Comment C9-2 of this letter. Many of the details which the City of Edmonds has requested in its Draft EIS comments, relate to information that either does not involve significant adverse impacts, or is information that is important prior to issuance of actual permits, but may not be essential to include in an EIS. The Final EIS discloses probable significant adverse impacts and mitigation measures at a level that allows for meaningful comparison of alternatives. There is no practical or legal need under SEPA to include this work in the form of a supplemental Draft EIS. And, there is no SEPA case law calling for such action. Moreover, it is the principal task of the Final EIS to respond to questions and issues raised in comments on the Draft EIS and, if appropriate, to revise alternatives, analysis of the probable significant adverse environmental impacts and the discussion of reasonable mitigation measures. This Final EIS both addresses each response raised on the Draft EIS and contains revised

analysis in many areas. It takes into account the new information available through the ongoing review by King County, as well as the information drawn from comments and additional studies conducted since issuance of the Draft EIS. This type of work is what SEPA contemplates is the function of a Final EIS.

Response to Comment C9-4

If the Unocal site is selected as the final location for the Brightwater Treatment Plant, King County will work directly with the City of Edmonds and pertinent permitting agencies on mitigation strategies and solutions to Brightwater construction and operational impacts. This Final EIS contains additional analysis in regard to the co-location of a Brightwater Treatment Plant sited at Unocal and the Edmonds Crossing multimodal project. There is no basis identified to date, either in this EIS or the comments provided by the Washington State Department of Transportation to conclude that the Unocal plant would in any way preclude the siting of Edmonds Crossing. Please refer to Chapter 3 of the Final EIS, for updated information on the possible co-location of the Brightwater Treatment Plant and the Edmonds Crossing project at the Unocal site.

Under the “Unocal Structural Lid” sub-alternative, the Brightwater Treatment Plant facilities would occupy the majority of the useable area of the site and the co-located facility, such as the Edmonds Crossing project, would be constructed on top of a lid above the treatment facilities. A structural lid to support the Edmonds Crossing Project would cover approximately two-thirds of the Unocal site. All process facilities of the treatment plant would have non-structural covers to prevent the release of odors. The Unocal site provides the potential opportunity to deliver two regional infrastructure projects at one location and it has the potential to lower the overall costs as opposed to doing them separately. Additionally, there are the added benefits of enhancing the nearby wetlands, fish hatchery, and public shoreline access.

City of Edmonds Comments on the
Brightwater Regional Treatment System
Draft Environmental Impact Statement
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which is also planned for the Unocal site. Because the Edmonds Crossing project is a well-established regional facility already sited and acknowledged in existing local and regional plans, the Unocal alternative for Brightwater should make clear that any possible selection of the Unocal site must include the Edmonds Crossing project in its design. Referencing the Edmonds Crossing project as a possible sub-alternative is not adequate, and hides the fact that the Unocal site alternative for Brightwater must factor in the costs and impacts that would result from co-locating both of these regional facilities on the Unocal site.

C9-4 It is important to note that while the DEIS attempts to assert that Brightwater is an "essential public facility" and cannot be "precluded" by any jurisdiction, the DEIS does not fully evaluate the Brightwater project in such a way as to assure that another essential public facility, the Edmonds Crossing multimodal project, is not precluded from locating on the same Unocal site. The basic Brightwater project alternative does not include an assumption that Edmonds Crossing is planned to be located at the Unocal site; that analysis is deferred to a "sub-alternative" which is not directly and consistently compared to other alternatives evaluated in the DEIS.

C9-5 The DEIS does not fully consider the possible Unocal location in relation to other established regional facilities in the vicinity. The Edmonds Wastewater Treatment Plant is a *regional* (not local) facility located very close to the Unocal site. Immediately north of the Unocal site are a series of public beaches and the Port of Edmonds, also clearly called out as regional facilities in the city's comprehensive plan. The planned expansion of the existing Amtrak station to accommodate the Edmonds Sounder commuter rail station is situated north of the Port. The existing site of the Edmonds ferry terminal (connecting to Kingston) is also located on the waterfront north of the Unocal site, at the base of Main Street; the main road access to the ferry terminal runs by the entrance to the Unocal site. The DEIS does not adequately address how the Brightwater project will be compatible with these regional facilities, nor does it adequately address how siting Brightwater at this location will meet the criteria contained in the adopted Snohomish County process for siting essential public facilities.

C9-6 Of particular concern is the location of the proposed Brightwater project adjacent to the Edmonds Marsh. The Edmonds Marsh was recently inventoried by the City of Edmonds as part of a comprehensive evaluation of its shoreline resources. The marsh was called out as a location which presents a significant opportunity for enhancement, especially considering concerns for salmon habitat under the Endangered Species Act. For this reason, the Edmonds Crossing project proposed daylighting an open-channel link between Willow Creek, the Marsh, and Puget Sound. The DEIS for Brightwater does not propose this type of mitigation for its project, nor does it consider how the project will cover the site with a "lid" and yet still provide this type of interface and enhancement for the adjacent wetland and waterways. This is of particular importance when evaluating possible impacts of the Brightwater project under the Endangered Species Act and the city's shorelines regulations.

Response to Comment C9-5

An EIS requires discussion of the project's relationship to land use plans and policies. This discussion can be found in Chapter 11 under the Regulatory Environment and Impacts sections in the Draft EIS and has been updated in the Regulatory Environment, Impacts and Mitigation sections, and Appendix 11-A, Land Use Plans and Policies: Brightwater Regional Wastewater Treatment System, of the Final EIS. The discussion identifies the proposal's consistencies as well as inconsistencies with existing plans and policies, meeting one of the purposes of SEPA: disclosure. SEPA does not, however, require that a proponent demonstrate in an EIS consistency with land use plans and policies. This EIS does identify those instances in which rezones or other legislative changes may be required to allow a Brightwater Treatment Plant to become consistent with existing plans and policies. The Brightwater EIS also identifies the principal permits and approvals that are required for the various Brightwater facilities. Information relating to permit or approval criteria is also provided. SEPA does not require that an EIS demonstrate that each condition or criteria of permits and regulatory approvals for a proposed project be identified. The appropriate time and place for evaluating the extent to which a project satisfies any specific permit or approval criteria is in the local, state, and federal permit and approval processes. For the Brightwater project, this process will be initiated following issuance of the Final EIS and selection of a specific Brightwater System. It is at this time that the final details of the system facilities would be more clearly defined, and permit processing would begin.

Several Draft EIS comments focused on the extent to which current development regulations or essential public facility (EPF) criteria may not ultimately be met by the project. In some instances, as identified in the EIS, legislative changes (i.e., rezone) may be required for the Brightwater System to be built. This is not unusual at this early stage in the siting process for large regional facilities. In other instances, King

County will, following issuance of the Final EIS and selection of a specific Brightwater System, proceed to apply for regulatory permits and approvals and will be demonstrating compliance with permit criteria. In all cases, the Brightwater facilities would be constructed under applicable laws.

King County may pursue other legal avenues in order to clarify applicable regulatory requirements and secure the ability to construct Brightwater facilities.

Response to Comment C9-6

The proposed daylighting of Willow Creek is included in the proposed Brightwater Treatment Plant at the Unocal site and is shown in the site layout in Chapter 3 of the Final EIS. The Brightwater Treatment Plant facilities would occupy the majority of the useable area of the site and therefore any co-located facility, such as the Edmonds Crossing project, would be constructed on top of a lid above the treatment facilities. The proposed treatment plant fits within the boundaries of the vegetation areas (with the exception of the space reserved for conventional activated sludge [CAS] for the 72-mgd sub-alternative). In addition, the complete functionality of the Edmonds Crossing facility is incorporated into the conceptual lid design, including any mitigation measures proposed. Additional description of the lid sub-alternative and the site layouts for each sub-alternative are shown in the Appendix 3-A, Project Description: Treatment Plant.

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C9-7 When considering and evaluating alternatives, SEPA requires that "reasonable alternatives" be evaluated which "could feasibly attain or approximate a proposal's objectives, but at a lower environmental cost or decreased level of environmental degradation" (WAC 197-11-786). A major concern here is that only two base alternatives – i.e. two alternative sites – have been considered in this DEIS. It is hard to believe or understand how, within King County's entire service area; only two reasonable alternatives could be found to site this project, particularly when the Unocal site is situated in the midst of a highly urbanized, environmentally sensitive area with a number of regionally significant facilities already located in the vicinity.

C9-8 The DEIS states on Page 1-17, "The need for the Brightwater system was specifically identified in the final Environmental Impact Statement prepared for the King County Regional Wastewater Services Plan (RWSP) issued in April 1998 and incorporated by reference in this Draft EIS."

C9-9 In RWSP document, the Executive's preferred plan clearly notes on Figure EP1-1 that the proposed sewage treatment plant was to be sited in Snohomish County, focusing particularly on the Edmonds/Mill Creek/Mountlake Terrace areas. Therefore, after 1998, the process of choosing site selection criteria and the supposed thorough evaluation of multitudes of potential sites in both King and Snohomish Counties for the proposed sewage treatment plant has been a bit of a sham. The open houses and meetings King County has held in Snohomish County over the past 2 years were designed simply to alleviate the anxiety of Snohomish County citizens and attempt to build local support for the adopted 1998 RWSP.

C9-10 What public meetings and comment periods were undertaken in 1998 during the RWSP EIS process? How was notice given to the residents of Snohomish County? Failure to give such notice is an obvious violation of SEPA Rules [WAC 197-11-030(2) (c)], which clearly states, "Encourage public involvement in decisions that significantly affect environmental quality," especially, one might think, the public that is most likely to be impacted.

C9-11 In the following section, the City has identified those areas of the DEIS that inadequately address the impacts of the project alternatives, or areas in which we feel additional information is essential to understanding the mitigations proposed. The majority of these concerns are related to the scoping questions submitted to King County by the City in June 2003.

Generally, the City's primary areas of concern include the areas listed below. Specific discussion of these concerns follows.

- Adequacy of the analysis to address impacts and provide mitigations under the Worst Case Analysis SEPA provisions.

Response to Comment C9-7

SEPA does not require that all reasonable alternatives be evaluated in an EIS. In order to provide meaningful information and detail on each system, the Brightwater EIS is limited to three action alternatives plus the No Action Alternative. Moreover, considerable analysis and earlier SEPA review preceded this EIS. For example, during Phase 1 of the Brightwater siting process, over 95 land areas were considered as a potential site for the treatment plant. These land areas were analyzed for serious engineering and environmental constraints that would limit the construction or operation of a wastewater treatment facility. Examples of constraints include steep slopes, flood zones, and biological preserves or conservation areas. This analysis revealed that approximately 38 of the 95 land areas were largely unconstrained. Next, policy site screening criteria were applied to these land areas, and as a result of this work, the King County Council adopted six candidate sites in May 2001. These six candidate sites were further evaluated, which led to the King County Council December 2001 decision, approving the Unocal and Route 9 Systems to continue forward in the environmental review process. A SEPA EIS was issued on the RWSP in 1998 that identified the need for Brightwater, and there were three separate subsequent SEPA determinations associated with the process outlined above.

Information is documented and available on hard copy at area libraries, on CD upon request through the Brightwater project team at 206-684-6799, toll-free at 1-888-707-8571, via e-mail at *brightwater@metrokc.gov,* and online at http://dnr.metrokc.gov/wtd/brightwater/library.htm.

Response to Comment C9-8

The King County Council adopted the Regional Wastewater Services Plan (RWSP) by Ordinance 13680 in November 1999. This ordinance identifies the need for a new regional north treatment plant, now known as the Brightwater System, to serve the wastewater treatment capacity needs of the

northern portion of King County's wastewater service area. No site had been identified before or at the time this ordinance was adopted. Ordinance 13680 provides policy guidelines on the siting of the Brightwater System. For example, treatment plant policy (TPP) 2 of Ordinance 13680 states: "King County shall provide additional wastewater treatment capacity to serve growing wastewater needs by constructing a new north treatment plant in north King county or south Snohomish county and then expanding the treatment capacity at the south treatment plant...." The Final EIS for the RWSP does not identify any specific sites for the new north treatment plant. Figure EP1-1 of the Final EIS for the RWSP states: "No site identified at this time for north treatment plant, conveyance, or outfall."

Response to Comment C9-9

The purpose of the Brightwater Public Involvement Plan is to inform and involve interested and affected individuals and groups. King County has worked to provide people with multiple opportunities to learn more and to express their opinions on the project in the manner that best meets their individual needs. For a list of public involvement activities to date, please refer to the response to The Washington Tea Party, Comment O14-31.

Response to Comment C9-10

Snohomish County agencies were involved in wastewater planning as early as 1992 when the Municipality of Metropolitan Seattle (Metro) was developing Wastewater 2020 Plus. Agencies participating in Wastewater 2020 Plus included the Alderwood Water District, the City of Edmonds Public Services, Snohomish County Community Development, a Snohomish County councilmember, and the City of Everett Public Works (*Wastewater 2020 Plus: Summary of Stakeholder Interviews*, prepared for the Municipality of Metropolitan Seattle by HDR Engineering, Inc., Barney and Worth, Inc., and Associated Firms, March 1992).

During 1994, a Determination of Significance and Scoping Notice on the proposed Regional Wastewater Services Plan (RWSP) was published in *The Seattle Times* on September 1 and in the *Northshore Citizen* on September 14 and September 21. Notice was mailed to 2,000 agencies and/or individuals on the RWSP mailing list. The list included the mayors, councilmembers, and planning and public works departments in the Cities of Bothell, Brier, Edmonds, Everett, Lynnwood, Marysville, Mill Creek, Mountlake Terrace, Mukilteo, and Stanwood and in the Town of Woodway, and the mayor, councilmembers, and planning and public works departments of Snohomish County. In addition, water and sewer districts on the mailing list were notified, including Alderwood, Cross Valley, Everett, Olympic Terrace, Olympic View, and Silver Lake. Names of Snohomish County citizens who had expressed an interest in wastewater issues were added to the mailing list and notified. This included individuals in Alderwood Manor (1), Bothell (15), Brier (5), Edmonds (71), Everett (50), Lake Stevens (4), Lynnwood (57), and Mountlake Terrace (29).

An electronic copy of the Determination of Significance and Scoping Notice was posted on the Seattle Community Network. Scoping meetings were held in downtown Seattle on September 13 and 21, in Renton on September 15, in Auburn on September 22, in Bothell on September 27, and in south Seattle on September 29. King County received 69 written comments on the scope of the Environmental Impact Statement (EIS), including comments from three citizens of Snohomish County—one each from Brier, Everett, and Lynnwood.

During 1995 and 1996, information on the proposed RWSP was provided to members of the public through displays in public places, sewer bill inserts for customers of local sewer agencies served by King County, and presentations to the Regional Water Quality Committee (RWQC). The RWQC provides guidance to the Metropolitan King County Council on regional water quality and sewer service issues.

The Draft RWSP and EIS were issued on May 7, 1997, and the public comment period ran from May 7 to August 5, 1997. Residents of Snohomish County were notified of the RWSP EIS in several ways: A notice of Draft EIS availability was published in *The Seattle Times* on May 8, 1997, *The Daily Journal of Commerce* on May 8 and May 19, 1997, and *The Everett Herald* on May 8, 1997. Advertisements were placed in other newspapers with Snohomish County circulation, including the *Woodinville Weekly*, the *Northshore Citizen*, and the *Lynnwood Enterprise*. Notice also was mailed to everyone on the RWSP

mailing list, as described above. The RWSP, Draft EIS, and Draft Financing Plan were available from the King County Wastewater Division, and they could be reviewed at the Mill Creek Public Library in Snohomish County, Seattle libraries, the University of Washington library, and on the King County Web site.

Public hearings on the Draft EIS were held in downtown Seattle on June 11, in Renton on June 18, in Shoreline on June 24, in Bellevue on June 30, and in Woodinville on July 16. Testimony was recorded by a court reporter at all of the hearings. Five citizens of Snohomish County, including two councilmembers from the Town of Woodway, attended the public hearings held in Shoreline and Woodinville.

During the comment period, 75 commenters provided a total of 381 comments as either hearing testimony or written comments. Commenters included 55 private individuals or organizations, 12 local government agencies, 5 state agencies, 1 federal agency, and 2 tribal governments. Comments on the Draft EIS were received from Snohomish County agencies and citizens, including the City of Edmonds Public Works, the mayor and councilmembers of the Town of Woodway, The Chevron Real Estate Management Company, and one Woodway citizen.

In 1997, the RWSP Executive's Advisory Committee met; the Committee included representatives of Snohomish County, the City of Everett, the City of Lynnwood, and the Alderwood Water and Sewer District. An RWQC Workshop was also held in 1997.

When the Executive's Preferred Plan and Final EIS on the RWSP were issued in 1998, a brochure summarizing the RWSP was mailed to everyone on the RWSP mailing list. Public meetings were held in Bothell, Seattle, and Renton. A total of 126 people attended, and 29 of them provided comments about the RWSP.

In addition, King County has worked with several committees over the years to provide information on the RWSP and discuss concerns. These committees include the RWQC, the Citizens' Water Quality Advisory Committee, and the Metropolitan Water Pollution Abatement Advisory Committee (MWPAAC). MWPAAC includes representatives from all local sewer agencies served by King County, including those in Snohomish County.

Response to Comment C9-11

Please refer to the response to Comment C9-3 in this letter, and the response to the Sno-King Environmental Alliance/Joseph, Comment O17-49, in regards to the Draft EIS discussion of worst-case analysis. This comment also addresses the adequacy of the analysis of land use issues associated with the Unocal System alternative, but fails to identify specific concerns. Please refer to the responses to the more specific City of Edmonds' comments on the Draft EIS Land Use Chapter, Comments C9-83 to C9-96. The Final EIS also states that one Unocal sub-alternative, the possible construction at some future date of a public park over the structural lid, has been withdrawn. Finally, the Final EIS does provide additional analysis of the Unocal Structural Lid sub-alternative in Chapter 3**.**

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- The adequacy of the analysis in considering the land use issues associated with the Unocal Alternative relative to the location of the treatment facility.
- The adequacy of analysis that has not finalized the treatment plant subalternatives to the degree that the ir full impacts are sufficiently determined and the proposal for the Unocal treatment facility can be considered in whole. C9-11

DETAILED COMMENTS

C9-12

SEPA Procedures / Issues Associated with Adequacy of Worst Case Scenario
The DEIS (Foreword, p. ii) states this is a "project" EIS. Further, *"this preferred alternative is for public discussion only, and is not intended in any way to prejudge the County's final decision, which will be made after additional analysis and public comments on the DEIS are collected"*). In that same section, the statement is made that *"where information is limited, the impacts presented are a worst case analysis"* (emphasis added).

WAC 197–11–080 indicates that "agencies may proceed in the absence of vital information …" and "… shall generally indicate in the appropriate environmental documents its worst case analysis and the likelihood of occurrence; to the extent this information can reasonably be developed."

At "Subsequent Environmental Analysis" (Fact Sheet, p. viii), the statement is made that *"this EIS is intended to serve as the basis for all local and state permits and approvals required to construct Brightwater facilities."* Yet the afore-mentioned "additional analysis" and resulting decision may affect local (City) permit review processes.

The City is concerned about how the "additional analysis" will be integrated into the SEPA record and provided to the public, particularly for construction activities likely to occur within its boundaries. Further, the City is concerned that the general nature of the conveyance "corridor" analysis may not adequately address "worst case" conditions resulting from conveyance and portal construction at specific sites within its boundaries and that the subsequent "additional analysis" may reveal significant impacts on adjacent properties and activities for which suitable mitigation measures have not been identified within the "project" EIS. An example of this could be the Unocal treatment facility alternative, which in this DEIS is presented with two relatively different subalternatives that should be evaluated along side other project impacts.

Given that the specific location of proposed portals are not determined, it is impossible to evaluate the probable construction and operational impacts associated with those sites, and to evaluate the adequacy of the mitigation proposed. Once the specific portal locations are proposed, the City of Edmonds wishes to comment on the specific mitigation proposed by the county to address those impacts.

Response to Comment C9-12

Since the date of issuance of the Draft EIS, additional analysis has been and will continue to be conducted on all aspects of Brightwater. The portions of the work that relate to information that SEPA requires be addressed in an EIS are included in this Final EIS. Thus, considerable additional detail is included on all EIS alternatives and portal locations. For example, specific candidate portal sites are now identified in the Final EIS for each conveyance corridor. In certain areas where the Draft EIS took a "worst-case" approach, the additional information generated in the following 10 months makes it possible for the Final EIS to include a far more specific evaluation of significant impacts and identification of mitigation measures. These impacts fall within the parameters of what was in some instances a more generalized analysis in the Draft EIS. Outside the scope of the EIS, King County is working on a range of issues associated with the design, construction and operation of Brightwater facilities. Much of this information is also shared with the public and regulatory agencies. The permit process in many jurisdictions will provide an additional opportunity to conduct additional evaluation of impacts and further consider mitigation that may be appropriate for any given Brightwater facility.

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C9-12 **As already stated above, the Unocal alternative – i.e. the "basic" alternative – should explicitly include all options (including "sub-alternatives") that would assure that Brightwater could be co-located with the Edmonds Crossing project on the Unocal site. The City of Edmonds expects to be able to comment on supplemental EIS information that would result from further, detailed, site-specific study of the Unocal site alternative, if that site is chosen for further consideration.**

Chapter 1: Summary

1. Section 1.5.1.1

C9-13 Mention is made of the buffer area needed at either plant site. There is insufficient room at Unocal for this stated objective. When the "Multimodal" facility is constructed on the lid of the plant, the buffer will be less than five feet, not fifty feet.

2. Section 1.5.3.1

C9-14 Do the "relatively narrow" buffers at the Unocal site meet the siting criteria approved by the King County Council? The criteria do not state five foot buffers, which will occur when the Unocal site incorporates the "Multimodal" facility.

3. Section 1.6

C9-15 Mention is made of adding an additional 20 mgd of capacity at the Renton facility. This is inconsistent with the planning for the Brightwater facility, where design engineers are contemplating using technology allowing a much smaller footprint to treat a given amount of flow. At the same time, however, the Renton facility is using conventional, high-footprint technology for treatment. Can the technology (membrane filtration) being considered for Brightwater be used for Renton? This would potentially mean that an additional capacity of 100 mgd could be constructed, completely removing the need to construct a new plant, conveyance systems, and outfalls.

5. Section 1.8.2

C9-16 No mention is made that the much longer influent pipes for the Unocal site will result in much higher odors being present in the influent flow, adding an impact to the Edmonds site and its conveyance corridor. Sending flow to a site with a shorter influent route would enable the influent to be much fresher, with less odor loading to the facility.

6. Section 1.9.1

C9-17 The lid is not the only modification needed to combine the Edmonds Crossing with Brightwater. Significant additional facilities would need to be added, such as:

- odor control – increased level of treatment, tank coverage and redundancy;

Response to Comment C9-13

Additional detail has been provided in Chapter 3 of the Final EIS on the location of the specific treatment plant processes with the sub-alternatives for the Unocal site. The site layouts for all sub-alternatives are shown in Chapter 3 and Appendix 3-A, Project Description: Treatment Plant, of the Final EIS. For the 36 million gallon per day (mgd), 54 mgd and 72 mgd treatment plant alternatives with the multimodal lid, there would still be a minimum 50 foot buffer setback from the property line to the outside wall of the closest process buildings. In addition, there would be vertical buffer of the treatment plant would be below the multimodal facility and below the Woodway residents located at elevation 175 (the top treatment plant terrace would be at elevation 125).

Response to Comment C9-14

Ordinance 14278 confirmed that the Unocal site meets the site selection criteria adopted by Ordinance 14107. Please refer to the response to Comment C9-4 in this letter, for more information on the Edmonds Crossing sub-alternative. Updated information on buffers, impacts, and mitigation measures can also be found in Chapter 3 of the Final EIS.

Response to Comment C9-15

While membrane technology could potentially be used to upgrade the South Treatment Plant in Renton, the conveyance system to the plant would not be able to handle the predicted Brightwater flows. The option of upgrading one of the existing King County treatment plants in lieu of building a new treatment plant, was evaluated in the Regional Wastewater Services Plan, and a new treatment plant was selected as the Preferred Alternative.

Response to Comment C9-16

Odor control facilities will be installed along the Unocal influent alignment at locations where odors may be released. This will be at Portal 14 (North Creek), Portal 11 (Kenmore),

and Portal 7 (Lake Forest Park). Portal 7 will have a force main discharge structure. Additionally, liquid phase treatment (chemical injection) is proposed at Portal 14 and the new pump station at Portal 11 along the proposed Unocal conveyance route to reduce odors along the conveyance route and at the proposed Unocal Treatment Plant site. Chemical injection has been used successfully by King County to reduce odors. The injected chemicals will oxidize dissolved hydrogen sulfide gas within the liquid and reduce any potential gas emissions downstream. Additionally, vapor phase treatment will occur at each underground structure to treat fugitive air that may outgas.

Response to Comment C9-17

Significant additional facilities would not be required for the sub-alternative at the Unocal site that combines the treatment plant with the Edmonds Crossing project. In this sub-alternative, the public would not have any additional access to the treatment plant. The public access would be limited to the multimodal facility, which would be above and separated from the treatment plant.

In the treatment plant design, all liquid process tanks would be covered and redundant units provided. Multi-stage odor control systems would be used and would prevent odors from reaching people at the multimodal facility. No additional level of odor control would be required for the Unocal Structural Lid sub-alternative.

Access security and visual screenings would be included as part of the treatment plant. The Unocal Structural Lid sub-alternative would actually provide additional visual screenings because the multimodal facility would cover and hide a large portion of the treatment plant. All chemical and diesel storage and handling would be designed to comply with the applicable local, state, and federal regulations, such as the Uniform Fire Code (UFC), Resource Conservation and Recovery Act (RCRA), and OSHA. No gas would be stored onsite. Emergency evacuation procedures for the multimodal portion of the site would be developed during final design.

The staging area for the biosolids trucks would be on the upper terrace of the treatment plant and the public would not have access to the treatment plant. No additional staging area would be required for the biosolids trucks anywhere else in the plant or near the multimodal facility.

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C9-17
- safety systems – access security, emergency evacuation procedures, visual screenings, chemical and gas storage;
- staging area – sludge-hauling trucks need a large staging area to be kept away from the public in the multimodal area.

7. Section 1.9.1, Page 1-11.

C9-18
The DEIS states that "at this time, no final decision has been made on whether or not to construct a lid for these purposes." Nonetheless, if the DEIS purports to assess all impacts on a "worst case" basis, the DEIS must consider and thoroughly analyze the impacts and mitigation required to construct a combined Brightwater/Edmonds Crossing facility. The DEIS is clearly deficient and should contain an analysis and description of what a combined Brightwater/Edmonds Crossing facility would look like, how it would function, and how construction and development would be timed and coordinated. Additionally, a comprehensive analysis should be performed to determine impacts and mitigation of combining the two facilities. If the DEIS does not/cannot accomplish this at this time, the City of Edmonds would expect a supplement to the EIS to be completed at a later date, with full opportunity provided for public review and comment.

8. Section 1.9.1, Page 1-12.

C9-19
The DEIS states that "the decision to include a lid would need to be made before final design of the treatment plant begins so that the design and construction of the lid and treatment facilities could be coordinated." The City of Edmonds believes that if the Unocal site is chosen, the decision should be made prior to the determination of the final treatment plant alternative so the City has the opportunity to weigh the alternatives with this new information, and is able to comment on the proposal. The design and construction of the Brightwater project should also not proceed until a final design is completed which would incorporate an approved design for the Edmonds Crossing project.

It is highly speculative to state that "it is likely that construction of the Brightwater Treatment Plant would begin at the site before a final design is completed for the multimodal facility." The opposite could also be true.

C9-20
The regionally significant Edmonds Crossing project is supported by the Puget Sound Regional Council Destination 2030 Metropolitan Transportation Plan for Central Puget Sound Region -Destination 2030, VISION 2020 - 1996 Updated Metropolitan Transportation Plan, Washington State Ferries (WSF) System Plan for 1999-2018, Snohomish County GMA Comprehensive Plan Transportation Element, City of Edmonds Comprehensive Plan, and Port of Edmonds Strategic and Master Plans. The DEIS fails to highlight the regional support of the Edmonds Crossing project, which requires that King County include Edmonds Crossing as part of the basic Brightwater plan, not a sub-alternative as proposed.

Response to Comment C9-18

The Draft EIS did evaluate the potential environmental impacts associated with the co-location of the Brightwater project at the Unocal site and the Edmonds Crossing project in Chapters 3, 4, 5, 8, 10, 11, 12, 13, and 16. The impacts of this co-location are also evaluated in further detail in Chapters 4 through 17 of the Final EIS.

Response to Comment C9-19

Thank you for your comment.

Response to Comment C9-20

Chapter 11 of the Final EIS has been revised to include a discussion of the regional significance and support for the Edmonds Crossing project. The Final EIS has been revised to provide more detail on the "Unocal Structural Lid" sub-alternative that considers co-location with the Edmonds Crossing project. This is considered a "sub-alternative" in that it has many of the same characteristics as the Base Alternative for the Unocal site. The project description for the Unocal Structural Lid sub-alternative is described in detail in Chapter 3 of the Final EIS.

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C9-21 9. Section 1.9.1, Page 1-12.

The references to a vote in November 2002 and Referendum 51 are now out of date.

10. Section 1.9.2, Page 1-12.

C9-22 The question of whether or not wastewater flows from treatment plants operated by the Cities of Edmonds and Lynnwood will be treated at the Brightwater Treatment Plant, therefore requiring expansion of the facility's capacity, should be answered prior to selecting a final alternative. The DEIS states that the facility could be expanded to 72 mgd, but does not state whether this will require additional land, above the 32 acre threshold. This alternative requires assumption of the Edmonds Wastewater Treatment Plant flows as referenced in Section 1.9.2.; this alternative has not been endorsed by the City of Edmonds, operator of the Edmonds wastewater treatment plant.

C9-23 The language in Table 3-17, pg. 3-109 describes "additional structures on the northern perimeter of the site (extending the footprint of the 54-mgd buildings) and therefore placing additional structures closer to the perimeter vegetation areas." Figure 3-8 does not depict the boundaries of possible expansion related to the 72-mgd sub-alternative. This also conflicts with Figure 7-6 which depicts a 72 mgd alternative that is only subtly distinguishable from Figure 7-5.

What is amount of site area required for each alternative and sub-alternative?

11. Section 1.9.2

C9-24 The Draft EIS incorrectly states that there are "two existing local wastewater treatment plants…" in Edmonds. The Edmonds facility is a regional facility, already performing regional wastewater treatment needs for southern Snohomish County and North King County.

12. Section 1.9.4

C9-25 Reclaimed water usage will be much more difficult and expensive if the Unocal site is chosen. Unocal is located far from industrial users, and at a low elevation. Installation of pumps, piping, and storage systems necessary to deliver reclaimed water inland will be much more involved for the Unocal site than the Route 9 site. Locating Brightwater at Route 9 would allow a source of high quality water to be passing through the areas likely to use it, with minimal connection costs.

13. Section 1.9.8

C9-26 The technologies chosen should not be chosen for the "intended end uses, such as the land application and composting of biosolids." If the Unocal site is chosen, the City of Edmonds must be able to weigh in on technologies that present a burden to the community or conflict with proposed uses of the property (multimodal center). The type

Response to Comment C9-21

Chapter 1 of the Final EIS has been revised to reflect current dates and events.

Response to Comment C9-22

Chapter 3 of the Draft EIS indicates that 34 acres would be required if the sub-alternative of treating the flows from the cities of Edmonds and Lynnwood was incorporated into the Brightwater Treatment Plant. This sub-alternative could occur only if Brightwater is located at the Unocal site and if the cities of Edmonds and Lynnwood decided to pursue such an option.

Response to Comment C9-23

The layouts for each site and sub-alternatives are shown in Chapter 3 of the Final EIS. Layouts and treatment plant footprint sizes are also included in Appendix 3-A, Project Description: Treatment Plant, of the Final EIS. The Route 9 site area required for the treatment plant facilities is approximately 77 acres. For Unocal 36- and 54-mgd plants, 34.5 acres are required, 34.7 acres for 72 mgd, and 39.1 acres for 72 mgd with the lid. The revised figures are included in Chapter 3 and 7 of the Final EIS.

Response to Comment C9-24

Thank you for your comment. The text of the Final EIS has been clarified.

Response to Comment C9-25

A feasibility analysis of reclaimed water usage has been conducted for both sites. The results of the analysis can be found in Appendix 3-D, Reclaimed Water Technology Review and Evaluation of Potential Water Reuse Opportunities.

Response to Comment C9-26

King County will continue to coordinate with the City of Edmonds as it relates to technology and potential consistency with community goals. King County would work directly with the City on all aspects of project design that fall under City jurisdiction. Odor control regulations in this region are promulgated by the Puget Sound Clean Air Agency. These regulations are described in detail in the Appendix 5-A, Odor and Air Quality: Treatment Plant. The City of Edmonds can provide comments to the Puget Sound Clean Air Agency, for consideration in its permit process. The types of odor control and solids processing technologies proposed for the project are described in the Appendix 3-A, Project Description: Treatment Plant.

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C9-26 of odor control and solids processing should be subject to approval by the jurisdiction. Choosing technology to fit the County's preconceived solids disposal preference is not acceptable if it is incompatible with the local situation.

Chapter 2: Background

1. Section 2.2.2

C9-27 Footnote 3 states that an agreement may be modified depending upon the final site selected. This is a highly speculative assumption; all the jurisdictions involved in the agreement would have to concur. The Brightwater decision may not afford any benefit that would cause the existing agreement to be modified.

2. Section 2.2.3.3

C9-28 If alternative treatment technologies considered for Brightwater were considered for Renton, the size and timing of the Brightwater construction could be significantly reduced.

3. Section 2.2.4.2

C9-29 In regards to biosolids handling, King County should not "implement the same process at the Brightwater Treatment Plant" if it is located at Unocal. The safety aspects of anaerobic digestion are incompatible with the existing and planned uses (residential, mixed commercial, port/marina, recreation, and multimodal transportation facility) in and around the Unocal site. In its preliminary design and analysis work, King County compared Brightwater to other plants that do not use anaerobic digesters. The County must construct a similar facility as promised, or acknowledge unrepresentative facilities were used for those comparisons.

4. Section 2.2.4.7

C9-30 Use of methane gas for the purposes described in this section requires gas storage and handling facilities. This practice is not compatible with the existing and planned uses (residential, mixed commercial, port/marina, recreation, and multimodal transportation facility) in and around the Unocal site. Dealing with large volumes of explosive gases in an earthquake area immediately adjacent to a transportation hub dealing with thousands of people is not acceptable.

5. Section 2.4.3.3

C9-31 The Essential public facilities siting criteria and process will require much more than the cursory review included here. See additional comments on Chapter 11, pages 11-35 and 11-36, below.

Response to Comment C9-27

King County has a separate agreement with the Town of Woodway that obligates the County to treat Woodway's sewage but does not specify how or where it will be treated. Under that agreement, those determinations are left to the County. The Town of Woodway's sewage disposal agreement with King County is not related to the flow transfer issue raised by the City of Edmonds.

King County has an agreement with Edmonds for treatment (by Edmonds) of sewage from the County's Richmond Beach Service Area. That service area includes the Town of Woodway. Modification of that agreement before its expiration in 2036 would require concurrence of both parties (King County and Edmonds). Woodway is not a party to the County's agreement with Edmonds.

Response to Comment C9-28

Please refer to the response to Comment C9-15 in this letter.

Response to Comment C9-29

Anaerobic digestion is used at wastewater treatment facilities throughout the United States that are located near residential and commercial areas. The treatment processes for both the Route 9 and Unocal Treatment Plants include anaerobic digestion. An alternatives analysis was done early in the design process selected anaerobic digestion. It is unclear from the comment which comparison is referred to by the commentor. King County does not intend to use a process other than anaerobic digestion.

No methane would be stored onsite. The digesters themselves would be designed and operated to be safe and are compatible with land uses such as those planned for the Unocal site and the surrounding area. Anaerobic digestion is supported by King County's current biosolids policies. The policies were adopted by the King County Council in November 1999, as part of the Regional Wastewater Services

Plan, Ordinance 13680. The policies are intended to guide King County to continue to produce and market Class B biosolids. Ordinance 13680 states that King County shall strive to achieve beneficial use of wastewater solids. A beneficial use can be any use that proves to be environmentally safe and economically sound, and that utilizes the advantageous qualities of the material. Anaerobic digestion produces biosolids that can be used for beneficial reuse.

Response to Comment C9-30

Wastewater facility design and operational requirements and standards established by the Washington State Department of Ecology, the National Fire Protection Association (NFPA 820: Standard for Fire Protection in Wastewater Treatment and Collection Facilities), and the Uniform Fire Code (UFC) minimize the risk of potential explosions associated with gases such as methane in the wastewater conveyance and treatment system due to seismic or other events. King County has never had an explosion within its current wastewater system, and such explosions are in fact very rare in treatment plants in the United States due to the UFC and other applicable regulations. For additional discussion of methane explosion risks, refer to Chapter 9 of the Final EIS.

Response to Comment C9-31

Please refer to the response to Comment C9-5 in this letter.

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Chapter 3: Description and Comparison of Alternatives

1. Section 3.2.1.1

C9-32 Use of the digestion process to generate methane gas for the purposes described in this section requires gas storage and handling facilities. This practice is not compatible with the existing or planned uses in and around the Unocal site. Dealing with large volumes of explosive gases in an earthquake area immediately adjacent to a transportation hub dealing with thousands of people is highly questionable.

C9-33 Given the area surrounding the Unocal site, treatment technologies that do not use hazardous chemicals need to be chosen. Therefore, Ultraviolet Disinfection needs to be used for disinfection, rather than chlorinating and dechlorinating the effluent with conventional chemicals.

2. Section 3.2.1.3, Page 3-4; and 3.5.1.3, page 3-21.

C9-34 The City of Edmonds does not consider the DEIS's recommendation that barges could provide mitigation for increased truck traffic to be sufficiently addressed in terms of possible environmental impacts associated with that mitigation. Impacts associated with barge docking and the conveyance of materials to barges is not adequately addressed. What facilities are needed to accommodate barge maneuvering, mooring, and transport of materials? What temporary and permanent impacts would result? How would such a facility interface with the other regional facilities and natural features – on-shore and off-shore – of the vicinity? What construction impacts would occur, and how would these be mitigated? How would barges affect the Port of Edmonds, railroad, or ferry traffic?

3. Section 3.5.1.8, page 3-23.

C9-35 Although the DEIS for Brightwater purports to adopt the DEIS for the Edmonds Crossing project by reference, it fails to describe associated impacts and mitigation resulting from combining the Brightwater facility with the Edmonds Crossing project. These should be described in detail. See the comments on 1.9.1 (pages 1-11 and 1-12), above.

4. Section 3.6, No Action Alternative

C9-36 This alternative should also analyze the option of reducing the size of King County's service area. The Brightwater facility would not need to be built if Alderwood were to handle their own flows, as they have in fact studied. King County could consider withdrawing from their agreement with the Alderwood Water District, and have AWD construct their own facility in their own timeframe, in their jurisdiction.

C9-37 Mention is made of adding an additional 20 mgd of capacity at the Renton facility. This is inconsistent with the planning for the Brightwater facility, where design engineers are

Response to Comment C9-32

Please refer to the response to the City of Edmonds, Comment C9-30.

Response to Comment C9-33

As described in Chapter 3 of the Final EIS, ultraviolet light (UV) and sodium hypochlorite would be used for effluent disinfection at the Unocal site. Disinfection with UV would be used for reuse disinfection at both sites to achieve sufficient coliform reduction to meet Class A standards for reclaimed water. All chemical storage and handling, including sodium hypochlorite, would comply with applicable local, state, and federal regulations such as the Uniform Fire Code (UFC), Resource Conservation and Recovery Act (RCRA), and Occupational Health and Safety Act (OSHA). Such requirements include provisions for onsite spill prevention and containment measures. For additional information on storage and handling of hazardous materials, please refer to Chapter 9 of the Final EIS.

Response to Comment C9-34

The barge dock was identified in the Draft EIS as a potential measure to mitigate traffic impacts; however, it is no longer included as a proposed project element for the Unocal site and is not included in the Final EIS. It is an optional mitigation measure that would be considered to reduce traffic impacts on surface streets. Should the barge dock be reconsidered for implementation at some future time, an evaluation would be conducted on the fate of the existing Unocal dock. If the temporary barge dock were not constructed, the existing Unocal dock would not be demolished, as it would be beyond the project scope of Brightwater.

Response to Comment C9-35

Please refer to the response to the City of Edmonds, Comment C9-4 in this letter, for more information on the

Unocal Structural Lid sub-alternative. Chapters 4 through 17 of the Final EIS describe impacts associated with co-location of the Brightwater Treatment Plant with the Edmonds Crossing project.

Response to Comment C9-36

Average daily flows from the Alderwood Water and Sewer District totaled 9.2 mgd to 9.4 mgd in 2000 and are projected to be 13.1 mgd to 13.3 mgd in 2010. This is just over one-third of the planned 36-mgd Brightwater Treatment Plant. It is speculative at this time whether King County may in the future reduce its sewer service area. Eliminating the Alderwood District's flow from the entire King County System would not obviate the need for Brightwater, because of overall growth in the King County wastewater system and corresponding capacity issues at both the West Point Treatment Plant and the South Treatment Plant in Renton, which are currently treating flows from the part of the service area Brightwater would serve. If the Alderwood Water District did not contribute flows to Brightwater, phasing the facility would be investigated such as building an initial 18-mgd increment with the second and third increments, of 18 mgd each, to follow later.

The original agreement with Alderwood Water and Sewer District was executed in December 1966. The termination date of this agreement was changed from July 1, 2016 to July 1, 2036, in December 1991. Potential flow transfer benefits to the Alderwood Water and Sewer District include the elimination of lift stations and reduction of energy and operation costs. Similarly, with this agreement, King County retains its customer base thereby reducing the cost per customer for its operations and future expansion. In addition, please refer to the response to Comment C9-130, in this letter regarding Alderwood Water and Sewer District's plans for future development in regards to King County wastewater treatment.

Response to Comment C9-37

Please refer to response to Comment C9-15 in this letter.

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C9-37 contemplating using technology allowing a much smaller footprint to treat a given amount of flow. At the same time, however, the Renton facility is using conventional, high-footprint technology for treatment. If the technology (membrane filtration) being considered for Brightwater were to be used for Renton, an additional capacity of 100 mgd could be constructed, meaning that the construction of a new plant, conveyance systems, and outfalls could be unnecessary.

5. Section 3.8

C9-38 This overflow plan is in conflict with the City of Edmonds' existing discharge permit that prohibits bypassing "all or any portion of treatment works." Bringing in sewage from a very wide collection service area to Edmonds and then building in a bypass line to allow that sewage to pass untreated into waters off Edmonds is in conflict with Edmonds current permit and contrary to anti-degradation regulations. This is of particular concern since there are a number of public beaches and boating facilities in the immediate vicinity of the Unocal site.

6. Table 3-17, pages 3-109 and 110.

C9-39 Aesthetics - This table lacks discussion on how the multimodal terminal fits into the proposed 36-, 54- or 72-mgd alternatives, only that a lid is provided to accommodate the Edmonds Crossing project. Without plans, maps, etc., the narrative on pages 3-109 and 3-110 is incomplete and inadequate.

Chapter 4: Earth and Groundwater

C9-40 1. Describe how King County will monitor and mitigate for differential settlement from tunneling operations.

The DEIS response to this comment is that "appropriate" means would be used. The City considers this lack of specificity to be inadequate. Some survey level net method should be described to monitor settlement, and checked weekly while actively boring.

C9-41 2. What impact will changes in topography have on views, both those from the site and those that include the site as part of a viewshed?

The DEIS does not address this question; an illustration and description of what a completed treatment facility site would look like would be appropriate to add to the final EIS. Additional illustrations depicting the general appearance of a conveyance portal and associated buildings would also be helpful.

C9-42 3. What measures will be taken to control erosion, both during and after construction?

The DEIS says "suitable" measures will be used, but these are not defined, although a comprehensive erosion and sedimentation plan will be required by the City of Edmonds

Response to Comment C9-38

The proposed discharge would require approval of the Washington State Department of Ecology and, if approved, would be permitted in the NPDES permit for the Brightwater Treatment Plant. Specific requirements of the Edmonds discharge permit would not apply as permits are facility specific and the Brightwater Treatment Plant would have its own permit. Bypass of the treatment process and discharge of untreated wastewater would only occur if there was a power outage at the influent pump station and the redundant power supply sources (second electrical feed and onsite power generation) failed. Under this scenario, there would be a time delay of approximately 6 hours before the bypass would occur as the existing storage and the entire influent conveyance system from North Creek (Portal 14) to the bypass location would be filled. The time delay could be sufficient to energize the influent pumps before a bypass was to occur. A bypass would be expected to occur only under catastrophic conditions when all three power sources fail for a prolonged period of time, which would be approximately once every 100 years for Phase 1 (2010–2039) and approximately once every 75 years for Phase 2.

Response to Comment C9-39

For updated information regarding aesthetic impacts and mitigation measures, please refer to Chapter 12 of the Final EIS. Please refer to the response to Comment C9-4 in this letter for more information on the Edmonds Crossing sub-alternative.

Response to Comment C9-40

It is premature to specify the surveying method at this stage of the project. Specific details concerning surveying methods, accuracy, locations, frequency, and so forth would be developed during the design, permitting, and bidding stages of the project, and in consultation with local jurisdictions through which the conveyance would pass.

Response to Comment C9-41

Aesthetic/visual impacts have been illustrated and analyzed in Chapter 12 of the Final EIS, including all of the treatment facility buildings and structures as they are proposed for development at designated design elevations, and structures that could be constructed at portal sites.

Response to Comment C9-42

The range of erosion control measures that could be implemented for the Brightwater System is described in Chapter 6 of the Final EIS. Areas of potential erosion potential are described in Chapter 4. As more specificity of the actual design is developed and finalized, more detailed erosion control measures will be described, analyzed, and summarized for the necessary regulatory review and permit approvals. Please refer to the response to Comment C9-4 in this letter.

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C9-42 and Snohomish County. The City considers the specificity of this mitigation to be inadequate in addressing potential impacts and would like additional site-specific mitigation details provided.

4. Topography and soils.

C9-43 Section 4.1.3.1 page 4-14 last paragraph: Very good point regarding need for "stringent requirements for future field exploration programs" but mitigation does not address the measures that will be taken during construction, during the movement of the contaminated soils, and the protection of effects of contaminated groundwater on the Edmonds Marsh or the wildlife habitat location in the vicinity.

In section 4.2.1.1, page 4-33, it is stated that the elevation is 165 feet and the proposed excavation of 130 feet will result in unstable soils. The impacts of unstable soils need to be address as it relates to the Edmonds Marsh and the Edmonds Crossing mitigation of daylighting Willow Creek along the western edge of the eastern lower yard.

5. Section 4.3.1.1 page 4-52+: Groundwater Control and Dewatering.

C9-44 This section defines the re-entry of groundwater back into the hydrologic cycle. The analysis here is unacceptable. It is a known fact, acknowledged in the DEIS, that the groundwater is contaminated. As contaminated ground water is disturbed, moved, or relocated, the potential of "re-entry" (4.52) will impact the wetlands. What is the quality and quantity of the "re-entry" flow? King County *must* provide *long term* monitoring, analysis, a clean up plan, and an action plan to ensure that the water quality of Edmonds Marsh is retained, never impacted, and that the biological health of the Marsh is protected, preserved and retained.

C9-45 The mitigation measures described in this section are vague and undefined, and may therefore not result in satisfactory protections. Define the monitoring, the test results, the action plan and the methods of protection and preservation. It is an unacceptable to state that the "construction documents will include specific requirements." The Edmonds Marsh is a diverse and unique Class I wetland. King County needs to complete a biological assessment and ecological analysis which will be the basis for any decisions on the movement, removal, and reuse of any groundwater that will – or could – affect the Marsh.

6. General comments: Edmonds Marsh, groundwater and wildlife.

The potential of effects from the change of ground water are the most critical when it comes to the need for protection of the adjacent wetlands at the Edmonds Marsh. The Marsh is a Class I fresh/saltwater marsh. The DEIS briefly discusses the ecological values of the Marsh but does not provide a complete assessment of the habitat values. The contamination of the Unocal site and the mitigation actions taken will play a key role in the potential degradation of the Edmonds Marsh. In many chapters of the DEIS,

Response to Comment C9-43

The required mitigation measures necessary when contaminated soil or groundwater are encountered depends on the extent and nature of the contamination and on the applicable regulatory requirements. The site owner is presently conducting ongoing remediation efforts and so the nature and extent of contamination is changing. If the Unocal site is selected for the Brightwater project, King County will address contamination in accordance with all applicable regulations. Provisions will be included in the construction specifications that identify these requirements. Identification of mitigation measures beyond meeting regulations is premature at this time. To our knowledge, no specific provisions are presently in-place to protect the marsh or wildlife habitat from the existing contaminated groundwater. However, if the Brightwater Treatment Plant is built at the site, groundwater dewatering necessary for construction would be expected to pump out contaminated groundwater if present and if encountered, resulting in an improved condition over the present. In addition, Appendix 6-B, Geology and Groundwater, of the Final EIS, describes a groundwater dewatering system approach for the Unocal site that combines dewatering wells with a vertical barrier wall adjacent to the marsh that will limit flow into and out of the marsh.

This statement has been clarified in the Final EIS. The retaining walls planned for the site will result in a stable hillslope configuration after the cuts into the upper yard are made please refer to Chapter 4 of the Final EIS for more information.

Appendix 6-B describes the known contaminated soil and groundwater conditions at the Unocal site. If the Unocal site is selected for the Brightwater Treatment Plant, any soil or groundwater contamination encountered as part of construction, including groundwater removed as part of dewatering necessary to construct the facilities will be

treated, managed, and disposed as required by applicable regulations. If contaminated groundwater is encountered and removed as part of construction dewatering, this will result in an improved condition both to the site groundwater and to the Edmonds Marsh area. Chapter 6 of the Final EIS discusses groundwater treatment options that may be used to treat extracted contaminated groundwater if encountered. Also, the response to the Washington State Department of Ecology, Comment W5-43, provides a synopsis of contamination mitigation approaches.

Response to Comment C9-44

Please refer to the response to the Washington State Department of Ecology, Comment W5-43.

Response to Comment C9-45

King County is committed to avoiding significant impacts to this sensitive resource during construction and operation. It is likely that regular monitoring of the adjacent Edmonds Marsh during construction will be part of the permitting process. King County will work with permitting agencies to develop appropriate monitoring protocols for the marsh. Edmonds Marsh including its various habitat types, is described in more detail in Appendix 7-C, Unocal Sensitive Areas Technical Report. Please refer to the response to the Washington State Department of Natural Resources, Comments W3-187 and W3-191, which discuss dewatering and stormwater treatment, and how adjacent sensitive areas will be protected during construction and operations.

statements point out that monitoring wells are in place, but the DEIS does not discuss the need for additional monitoring wells that would provide the data necessary to ensure that any changes or construction of the Brightwater Plant will not negatively impact the Edmonds Marsh.

Because the DEIS states that "structures will penetrate into the regional aquifer" it seems clear that the DEIS is anticipating that the Edmonds Marsh *will* be impacted. The document is incomplete in preparing a mitigation plan for this known impact to the marsh. If the Edmonds Marsh is impacted, fish and wildlife will be affected.

Tides and tidal action affects the contaminated ground water on the Unocal site which needs to address flow during and after construction. A biological analysis of the Edmonds Marsh needs to be completed to identify the current status of the habitat and plant life existing in the Marsh. This pre-analysis and the establishment of post monitoring provides the mitigation criteria set for assessing any future impacts to the Marsh that will result from the construction and existence of the Brightwater Plant at the Unocal site (WET effluent testing system). C9-45

C9-46

7. General Comment: Programmatic vs. Project-level SEPA Analysis

As noted in the Land and Shoreline Use chapter, the evaluation of impacts to conveyance corridor portals is provided at a programmatic, rather than site specific level:

> The identified portal siting areas reviewed in this EIS are 72 acres in size; however, only 1 to 2 acres of the 72-acre siting area would actually be required for construction. **Because the specific portal locations within the siting areas have not been identified, the characterization of the land use and project impacts within the 72-acre portal siting areas represents the potential and not actual impacts. Following additional analysis, a precise location will be selected within each portal siting area** (emphasis added). This EIS is intended to disclose the range of significant adverse environmental impacts for whichever specific locations are selected as well as to identify related mitigation measures.[1]

Without the specific portal locations being identified for review in the DEIS, it is impossible for the City to be informed about the nature and extent of impacts associated with portal construction and operation. Edmonds believes that the analysis inadequately addresses the specific impacts associated with the excavation of Portals 23, 22, 24, and 3 on adjacent property, infrastructure, and the environment.

8. General Comment: Portal Characteristics, Design, Wall Reinforcement, and Erosion

The City considers the level of analysis at each portal to be inadequate to accurately reflect the nature of the probable impacts and appropriate mitigations. Please provide the following analysis prior to final selection of an alternative:

[1] Page 11-16.

Response to Comment C9-46

The Final EIS provides additional specificity with respect to both conveyance and portal information. This includes more information on locations of portal site alternatives, portal and conveyance corridor design, portal construction techniques, and appropriate mitigation. Please refer to Appendix 3-B, Project Description: Conveyance, of the Final EIS and Comment C9-3 in this letter for more information.

Following issuance of the Final EIS and the King County Executive's decision on a Brightwater System, jurisdictions with regulatory authority over Brightwater facilities will be able to conduct additional detailed discussion with King County concerning the construction and operation of any facilities proposed in their jurisdiction, as part of their respective permit and approval processes.

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- the specifics of the final portal and conveyance corridor design (portal diameter, structures to be located at the portal, conveyance corridor sizes, etc.)
- the soils and design information needed to evaluate the adequacy of the specific portal wall construction techniques proposed for the portal sites in order to be assured of their stability.
- the site-specific soil erosion information necessary to evaluate the mitigation proposed for the impacts identified at that specific site.

C9-46

Chapter 5: Air

C9-47

1. What is the total particulate discharge of air emissions from a single biosolids trucking round trip to an eastern Washington land application site? What amount of air pollutants will be discharged within the Edmonds city limits from biosolids trucking operations?

The emissions from the biosolids trucking operation has not been addressed in the DEIS, either for the entire round trip or for trucking within the Edmonds city limits. The emissions should be calculated for comparison with emissions from other sources, including the proposed wastewater treatment plant and existing sources within the Edmonds bowl area.

C9-48

2. What alternatives and mitigation methods are to be implemented to reduce the impact of these operations?

No alternatives to trucking of biosolids or mitigation methods are presented in the DEIS. Other alternative methods of transport or alternative methods of biosolids disposal should be discussed.

C9-49

3. How often will there be unavoidable odor emissions?

The potential for unavoidable odor emissions is not discussed in the DEIS. This potential should be evaluated for various scenarios of odor control equipment failure. Information should be provided on actual operating wastewater treatment facilities that have been proven and documented records of effective odor control using equipment or processes identical to those proposed for the Brightwater treatment facility.

C9-50

4. How will odor be contained from digesters?

It is not clear how odors from the digesters will be contained. How will the solids handling building odor control system be utilized to control odors from the digesters, if at all, or will there be another odor control system specifically for the digesters?

Response to Comment C9-47

The exhaust emissions from the biosolids trucks have not been included in the Final EIS. There would only be two to three biosolids trucks per day, and the exhaust emissions from these trucks would be negligible compared to the emissions from the thousands of vehicles that travel in Edmonds each day. Please refer to responses to Comments C9-52 and C9-53 in this letter for a discussion of odor control measures for biosolids trucking operations.

Response to Comment C9-48

The Brightwater design team considered other approaches, including rail and barge, and trucking was found to be the most cost-effective including considerations for odor control. All trucks would be filled in enclosed buildings and covered to trap any odors while en route to the reuse site. Please refer to the response to Comment C9-47 in this letter.

Response to Comment C9-49

The Brightwater Treatment Plant would be designed to prevent unavoidable odor emissions. There would be redundant units available for use in the case of equipment failure. There would also be maintenance air scrubbers that would only be used while maintenance is being performed (e.g., tank cleaning). This would prevent fugitive emissions from tanks. The technologies chosen for Brightwater are widely used throughout the world. A survey of several wastewater treatment plants and their odor control systems was performed in 2002 and is included in the Phase 3 Technical Documentation from the Brightwater Siting Study (*Odor Control for Brightwater Treatment Facility Technical Memorandum* [November 2002] and *Odor Modeling Approach for the Brightwater Treatment Facility Technical Memorandum* [November 2002]). In addition, the state-of-the-art conservative design of the Brightwater System including the odor control system's ability to handle peak

loads and have redundant units makes comparison with identical processes impossible.

Response to Comment C9-50

The digesters would have fixed covers. Digester gas could only escape to the atmosphere through the emergency pressure relief vents. Each vent would have a carbon system to scrub the digester gas before it is released to the atmosphere.

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C9-51 5. How will the release of gas be prevented from the digesters?

While it is stated in the DEIS that digester gas will be utilized as fuel for co-generation turbines, the methods or equipment proposed to prevent the release of gas are not described. Analysis of possible odor impacts and mitigations is inadequate without this discussion.

C9-52 6. How will odor be prevented during biosolids truck staging periods?

The potential for odors during biosolids truck staging or mitigation methods are not discussed. The truck staging operation should be described, including the number of trucks waiting for loads, location of staging area, length of time trucks are in the staging area, and mitigation methods to prevent odors during staging operations.

C9-53 7. How will odor be prevented during biosolids truck traffic through the City?

The question is not addressed in the DEIS. Please describe the trucks used to haul biosolids from the Brightwater treatment plant -- are the trucks to use airtight tanks to haul biosolids? What is the potential for spillage of biosolids once the trucks leave the treatment plant site?

C9-54 8. What process will be followed by the siting authority if odorous buildings are not kept in a negative pressure condition?

No description is provided in the DEIS concerning the process or measures to be undertaken by the siting authority or King County should any odor control facility or equipment fail to operate resulting in odors being detected off-site. Please provide information on the process for addressing this possibility.

C9-55 9. Will the plant be built to accept septage haulers and waste grease?

The question is not addressed in the DEIS. If septage and/or waste grease is to be treated at the Brightwater treatment plant, how many trucks per day are expected, where will they discharge septage and/or waste grease at the treatment plant and what measures would be taken for odor control? If septage and waste grease is not received at the Brightwater treatment plant, where will these wastes be disposed?

C9-56 10. What impacts and design challenges result from the coastal wind and rainstorms that periodically affect the Edmonds waterfront?

This question is not addressed in the DEIS. How do the storm events affect the design and operation of the proposed Brightwater treatment facility? What consideration has been given to extreme weather events in terms of odor controls and impacts on air quality?

Response to Comment C9-51

The digesters would be fully enclosed with fixed roofs. Only trace amounts of digester gas could escape through pressure relief vents during emergency conditions to prevent over-pressuring of the digester and its gas utilization system. The digesters and digester gas utilization system would be designed to minimize any potential emergency digester gas venting. A carbon system would be located at all vents for odor prevention and would scrub the gas in the event of an emergency release. During normal operations, the digester's gas system should be sealed with no leaks.

Response to Comment C9-52

The biosolids haul trucks were custom designed in 2000 with an onboard tarp system to minimize odor. These loaded trucks will leave the Brightwater Treatment Plant on a daily basis. Loaded trucks parked or staged onsite will be covered by their vinyl tarps to contain odor. Because the tarps prevent open-air contact, odors from the trucks are greatly reduced.

Response to Comment C9-53

The dump trucks and trailers used to haul biosolids were custom designed to minimize noise and odor. The boxes of the vehicles have clean smooth lines to be more appealing in a community situation. Each truck and trailer combination carries about 34 tons of semi-solid biosolids covered with an attached tarp. Although the biosolids are not liquid, the tailgates include a watertight seal. The covers contain the biosolids well during transport, so there are no leaks and no spills under normal operating conditions. While the boxes of the truck and trailer are not airtight, they do an excellent job of holding the biosolids safely and restricting odors. During transport, odor tends to be the result of air contact, and with the tarps covering the biosolids, odors are contained very well.

Response to Comment C9-54

For information on the odor prevention program and the monitoring that will be performed on the odor control system, please refer to the response to the Washington State Department of Transportation, Comment W2-5. Additional information about the wastewater treatment process and the odor control technology selected is provided in Final EIS, Appendix 5-A, Odor and Air Quality: Treatment Plant.

Response to Comment C9-55

There are no septage and waste grease receiving facilities proposed at the Brightwater Treatment Plant. Septage and waste grease haulers would dispose of their wastes at the South Treatment Plant, as currently practiced.

Response to Comment C9-56

Coastal wind and rainstorms would not affect the performance of the odor prevention system. Rainstorms and wind were modeled in the meteorological data from Paine Field and the Unocal site, and the model results predict no detectable offsite odor concentrations. In addition, wind and rainstorms tend to reduce odor impacts.

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C9-57 11. General Comment: Air Quality

The adequacy of the proposed air impact mitigations associated with portal construction cannot be evaluated since the amount of earth to be removed, and number of trucks required daily at individual portal sites has not been disclosed. This information should be provided in greater detail than presented in the DEIS.

C9-58 12 Section 5.1.2.1, Location of Sensitive Receptors

The list for the Unocal site omits: a senior center, a ferry terminal, a port, and a train station. All of these facilities are located within ½ mile of the Unocal site.

C9-59 13. Section 5.2.2.2

The Draft EIS is contradictory in this section regarding backup power. The "Criteria Pollutant and Toxic Air Pollutant Emissions" section in section 5.2.2.2 makes the statement under "Co-Generation Turbines" that "co-generation turbines would be used as an onsite power generation source …" Yet in the "Natural gas-fired standby turbine generators" section, the statement "onsite generation may be provided to further improve reliability" is made. Which statement is accurate?

Chapter 6: Surface Water

C9-60 1. What will be the impact on the Union Oil marsh and Edmonds waterfront as a result of overflows due to power failures or equipment failures? What specific mitigating measures are planned to address these impacts?

Brightwater is intended to reduce overflows in the King County Metro sewer system, but Union Oil marsh and the waterfront are not specifically addressed. These should be addressed in the DEIS.

C9-61 2. If portions of the facility are located on the "lower yard" of the Unocal site, adjacent to the Edmonds Marsh, how will area flooding impact the construction and maintenance of the plant?

While there is no record of a tsunami in this area, the City of Edmonds considers failure to consider mitigation for this type of event to be shortsighted. The City would like the DEIS to consider whatever possible mitigations are available to address protection from such natural hazards.

Response to Comment C9-57

Discussion of this issue is provided in Appendix 5-B, Odor Analysis: Conveyance, and Chapter 5 of the Final EIS.

Response to Comment C9-58

For information on sensitive receptors, please refer to the response to the City of Woodinville, Comment C5-125.

Response to Comment C9-59

Please refer to the response to the City of Woodinville, Comment C5-95.

Response to Comment C9-60

Dual electric feed to the site, standby power, and redundant equipment all would be provided for the Brightwater Treatment Plant to ensure reliable treatment plant operation during power outages and equipment failure. This would help prevent overflows. Influent flow conveyance strategies are also provided to manage inflows to the plant during periods of extreme rainfall so that treatment capacities are not exceeded and overflows are avoided.

During emergency flow conditions, when storm-influenced flows exceed either the capacities of the treatment plant or conveyance system, the four following flow management strategies would be implemented to reduce the potential for overflows:

- Utilize any available storage in the Brightwater influent conveyance pipeline.
- Divert excess flows into the Logboom Park Storage Facility and/or North Creek Storage Facility. The stored wastewater would then be returned to the conveyance system once peak flows have subsided and conveyance capacity is available.
- Divert wastewater to King County's West Point and South Treatment Plants through the Kenmore Interceptor Section 2 and Eastside Interceptor, respectively.

- Implement controlled filling of select conveyance pipelines to provide additional flow storage.

Emergency releases of untreated wastewater would be discharged at either the safety relief point in Kenmore to the Sammamish River or through the Brightwater Treatment Plant outfall to Puget Sound. As stated in to Appendix 3-E, Flow Management and Safety Relief Point, discharges at either location are estimated to occur approximately once every 100 years through Phase 1 (2010–2039) and approximately once every 75 years for Phase 2 (2040 and beyond). Overflows to the Edmonds Waterfront and the Union Oil Marsh would only occur if both a once in 75 and a once in 100 year event occurs and both the safety relief point and the outfall are not fully functional. However, such overflows are not anticipated and are unlikely due to dual electric feed to the site, standby power, and redundant equipment. SEPA regulations require that probable impacts be addressed, but not those that merely have a possibility of occurring, but are remote or speculative (WAC 197-11-782).

Response to Comment C9-61

The Final EIS does not include a specific quantification of the potential impacts of a tsunami on the proposed Unocal site. Consistent with the SEPA rules, WAC 197-11-782, the EIS focuses on probable significant adverse impacts and does not include impacts that are speculative or unforeseeable due to their infrequency. While it is acknowledged that it is theoretically possible that a tsunami could impact the Unocal site, such impacts are of a potential frequency that does not warrant their inclusion in the Final EIS. However, the treatment plant would be designed to comply with all applicable building code and Ecology requirements to withstand seismic events and other geologic hazards.

C9-62

3. How will the construction of deep tunnels impact local groundwater resources in movement, quantity, and quality?

The City considers the evaluation of possible impacts and mitigations relating to deep tunnel construction to be inadequate, and request that water quality be addressed more fully in future analysis.

C9-63

4. How will construction activities, related to both the Brightwater facility and its conveyance system, affect underground water movement, contamination, and ongoing cleanup activities at the Unocal site?

The City does not consider the DEIS to adequately addresses the possible impacts and appropriate mitigations with respect to underground water movement, contamination, and ongoing cleanup activities at the Unocal site. Please provide additional information.

C9-64

5. What methods of backflow prevention will be used to protect public water supplies?

The DEIS's analysis of protections of the public water are inadequate without discussion of this possibility.

C9-65

6. General comment: footprint for 72mgd alternative.

In section 6.2.2.1, page 6-23, Surface Water – It is not clear that the DEIS addresses impacts and mitigation related to the proposed 72 mgd alternative as they relate to the increased footprint that would result from that larger plant. What would be the comprehensive impacts to proposed buffer areas, e.g., how close would an expanded facility be to Shellabarger, Willow Creek, and the Edmonds Marsh? This could also relate to impacts on wetlands, noise, aesthetics, etc.

C9-66

7. Section 6.2.2.2, page 6-29; surface water and current conditions.

The narrative in section 6.2.2.2, page 6-29, states that "under current conditions, the treatment plant site is largely impervious and therefore new impervious surface area would only be created on a portion of the site." However, on pg. 7-5, the narrative states that the site area includes "approximately 30 acres of vegetated habitat, mostly upland forest on the slope above the Puget Sound shoreline adjacent to the former tank sites and along the northeastern boundary of the site." These two statements conflict and need to be revised. Much of the site is forested or contains vegetation. Additionally, much of the lower yard has a gravel surface and the document needs to demonstrate how this has been determined to be impervious.

Response to Comment C9-62

The issues of impact to groundwater movement, quantity, and quality are discussed in more detail in Chapter 6 and Appendix 6-B, Geology and Groundwater, of the Final EIS. To summarize, the groundwater regime (which encompasses quality and hydrology) will not be materially impacted by construction or operation of the conveyance system. No effects on groundwater quality are expected due to hydraulic gradients along the tunnels that are consistently inward during both construction and operation. Please see the response to the Washington State Department of Ecology, Comment W5-9.

Response to Comment C9-63

Please refer to the response to the Washington State Department of Ecology, Comment W5-43.

Response to Comment C9-64

It is assumed that when backflow prevention is mentioned that the reference is to locations where public water supply may be used during construction and to support the system components and treatment processes during operations. In these cases, backflow prevention would be provided and designed in accordance with the most current codes and standards.

Response to Comment C9-65

Potential impacts to buffers of Shelleberger Creek, Willow Creek, and Edmonds Marsh, as well as other onsite wetlands associated with the 72-mgd option at Unocal, are discussed in Chapter 7 of the Final EIS. Impacts to habitat and proposed conceptual mitigation for the 72-mgd sub-alternative at Unocal are illustrated in Chapter 7 of the Final EIS. Impacts to Willow Creek and Shelleberger Creek are described for the 72-mgd Unocal sub-alternative in Chapter 6 of the Final EIS. Noise impacts are described in Chapter 10 and aesthetic

impacts associated with the 72-mgd option are discussed in Chapter 12 of the Final EIS.

Response to Comment C9-66

As described in Chapter 7 of the Final EIS, approximately 28 acres of the 53-acre Unocal site are developed. Gravel covered roads and industrial areas (including associated subsoils) are typically very highly compacted and produce runoff similar in magnitude to hard covered areas such as concrete of asphalt. As a result these surfaces act as impervious surfaces. Changes have been made to Chapter 6 of the Final EIS. Also, refer to the project description in Appendix 3-A, Project Description: Treatment Plant, of the Final EIS for more information on impervious surface amounts associated with the project.

The graveled area within the Unocal site had been subjected to years of industrial activity during its former use. Such surfaces are typically highly compacted and are almost always considered impervious area for purposes of stormwater runoff analysis. Depending on the sub-alternative selected, the Unocal site could have anywhere from 25 to 28 acres of impervious surface upon buildout of all phases of the plant.

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Chapter 7: Plants, Animals, and Wetlands

C9-67

1. General Comment on Trees and Vegetation

The DEIS provides the following two mitigations to address these impacts:

> Vegetation removal, particularly trees, will be minimized.
>
> Portal siting will attempt to minimize impacts to sensitive resources. Most construction will occur in areas that are already developed. Undeveloped portions of portal sites will be revegetated as soon as construction is complete.

Edmonds does not consider these mitigations to be sufficient to address the potential loss (including habitat loss) associated with these environmental and visual resources. Please describe how vegetation, trees, and significant trees removed during construction would be replaced and indicate the period of time needed to reestablish the vegetation to adequately serve as a buffer, or to provide habitat.

C9-68

2. Dewatering

Chapter 7, section 7.2.2.1, and page 7-56: lowered water levels must not be allowed in the Class I wetlands or discharge into streams and wetlands. This cannot even be done on a temporary basis. The DEIS should provide additional analysis and protections to assure that dewatering activities on the Unocal site will have no impact on the water level and functionality of the adjacent wetland.

Chapter 8: Energy and Natural Resources

C9-69

1. Perform a cost/benefit analysis that compares the natural resources consumed in trucking biosolids and emissions generated to another method of solids handling with lower resource demand. Does the natural resources demand and pollution generated exceed the value of the biosolids?

The City considers this question to be important in evaluating the proposed Unocal treatment facility, relative to the overall impacts that development of that facility would have on the City of Edmonds. Answers to these questions are relevant to determining if the proposal and its impact on Edmonds should be considered further.

C9-70

2. What is the feasibility of sending all sludge to another King County plant, so that there are no solids handling at the Unocal site?

The City feels the DEIS should provide discussion of this option and that this possibility should be considered in evaluating the Unocal site. Impacts and mitigations associated with this option should also be presented.

Response to Comment C9-67

King County recognizes the City of Edmonds' concern about vegetation removal and is committed to avoiding and minimizing impacts wherever feasible. Where vegetation and habitat impacts cannot be avoided or minimized, appropriate mitigation will be provided, such as replanting with native vegetation to replace lost habitat. Please refer to the response to the City of Kenmore, Comment C3-97.

Response to Comment C9-68

Groundwater analyses of the effects of construction dewatering at the Unocal site are described in Appendix 6-B, Geology and Groundwater, of the Final EIS. Also, please refer to the response to the Washington State Department of Ecology, Comment W5-15.

Response to Comment C9-69

King County's current biosolids policies were adopted by the King County Council in November 1999, as part of the Regional Wastewater Services Plan, Ordinance 13680. The policies are intended to guide King County to continue to produce and market Class B biosolids. They state that King County shall strive to achieve beneficial use of wastewater solids. A beneficial use can be any use that proves to be environmentally safe, economically sound, and utilizes the advantageous qualities of the material.

A cost-benefit analysis that compares the natural resources consumed in trucking biosolids and emissions generated to other methods of solids handling will not be performed for this Final EIS. As noted in WAC 197-11-450, a cost-benefit analysis is not required by SEPA. Incineration or landfill disposal of biosolids would not provide beneficial reuse of biosolids and have not been considered for the Brightwater Treatment Plant as they are inconsistent with Ordinance 13680 (http://dnr.metrokc.gov/WTD/biosolids/Forest.htm, http://dnr.metrokc.gov/WTD/biosolids/Compost.htm).

Ordinance 13680 states that King County shall consider new and innovative technologies for wastewater solids processing, energy recovery, and beneficial uses brought forward by public or private interests; and King County shall seek to advance the beneficial use of wastewater solids, effluent, and methane gas through research and demonstration projects. The current biosolids program, which recycles the majority of the biosolids on sites in eastern Washington, is successful and offers large capacity, reasonable costs, and benefits to soils and crops. It will continue until alternatives are found that provide equal or better benefits at lower costs.

Response to Comment C9-70

The option of sending solids from Brightwater to either the South or West Point Treatment Plants is not considered to be a feasible alternative because of the following considerations:

- The West Point Treatment Plant is limited in its solids handling capability and does not have capacity to accept the Brightwater solids. The South Treatment Plant does have limited available solids handling capacity; however, that capacity will be required to handle future solids production. Thus, offsite solids processing could only be accomplished at the South Treatment Plant, and the operation would be temporary. Solids handling facilities would ultimately be required at Brightwater, or the South Treatment Plant facilities would require expansion to accommodate the Brightwater solids production.
- Unthickened raw solids production involves a substantial volume of material, estimated at approximately 640,000 gallons per day on an average annual design basis at 36 mgd. Onsite thickening at Brightwater would reduce the raw solids volume to approximately 120,000 gallons per day on an average annual design basis.
- Trucking of unthickened solids to the South Treatment Plant would involve approximately 106 truck trips per day at average annual design conditions at 36 mgd. Trucking of thickened solids to the South Treatment Plant would involve approximately 20 truck trips per day at average annual design conditions. Piped conveyance of solids to the South Treatment Plant raises other concerns, such as sufficient capacity and odor risks along the conveyance corridor, which was not designed for raw solids transport. A new pipeline would be required to convey raw solids to conveyance facilities that connect to the Eastside Interceptor. Either option would involve significant costs and environmental impacts.

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C9-71 3. Will the plant use fuel cell technology?

Please provide information on this question, and evaluate any impacts associated with this possibility.

C9-72 4. Will the use of variable frequency drives and other electronic gear interfere with neighboring residences?

C9-73 Please provide a response to this question, as electronic interference can be a disruptive impact on adjacent uses. Please evaluate the impact and provide appropriate mitigation.

5. Section 8.2.2.2

C9-74 Providing a dual-feed electric power supply is a prerogative that King County may choose, however an auxiliary generator on-site must be part of the design for the Unocal site. During the "inaugural day storm" in 1993, all power to the area was lost, and the Edmonds plant with a dual-feed electric power supply was left without power. There is a documented record that wastewater utilities relying solely upon dual-feed power systems experience power failures, with impacts to the environment and a resultant public outcry. Brightwater should provide on-site generator power supply for the Unocal site regardless of King County's choice for utility power service. The statement in the Draft EIS that "Generation of electricity onsite … is an option that may be considered…" is unacceptable for the Unocal site.

C9-75 The Draft EIS is contradictory in this section regarding backup power. The "Energy Consumption" section in section 8.2.2.2 makes the statement that onsite generation is an option that may be considered. Yet in the "Backup Power" section, the statement "two standby turbine generators … would be provided for backup power" is made. Which statement is accurate?

C9-76 A misleading statement is made in the "Backup Power" section regarding NPDES permit requirements. The Draft EIS incorrectly states that the NPDES permits "require … a second electrical feeder line be used as backup power…" In fact, NPDES permits require that agencies "prevent the discharge of untreated wastes… during electrical power failure… either by means of alternate power sources, standby generator, or retention of inadequately treated wastes." The requirement is to have alternate power sources or standby generators, not strictly a second feeder line as the draft EIS alleges.

C9-77 6. Section 8.3.1.1

See earlier comments relating to the incompatibility of biogas and the Unocal site.

Response to Comment C9-71

Fuel cell technology converts biogas (or natural gas) to electricity. Fuel cells are an emerging technology for the efficient, clean generation of electrical power from natural gas and methane. Fuel cells have extremely low nitrogen oxide (NOx), carbon monoxide (CO), and other air emissions, as compared to other technologies. However, fuel cells are an emerging technology and the long-term reliability and operating costs need to be validated.

The South Treatment Plant in Renton will be conducting a 2-year pilot demonstration project (starting in November 2003) of fuel cell technology, and fuel cells are being considered for use at Brightwater. The decision on whether to use fuel cells will be made during final design.

Response to Comment C9-72

Design features would be included in the Brightwater Treatment Plant to eliminate the interference from variable frequency drives and other electronic equipment. These features include, but are not limited to, using metallic conduits, shielded cables, and higher pulse drives. In addition, the harmonics would be minimized to lessen the potential effects from the variable frequency drives. The treatment plant itself has sensitive electronic equipment that needs to be protected from electronic interference.

Response to Comment C9-73

Please refer to the response to Comment C9-72 in this letter.

Response to Comment C9-74

Dual feed electric service would be provided for redundancy and reliability at the Brightwater Treatment Plant. Snohomish County Public Utility District (PUD) would supply electrical energy to the site from 2 independent, high voltage feeders to the plant from 2 substations near the Route 9 site and two near Unocal, all fed by the SNO-KING substation. The SNO-KING substation is a major, dual substation, with primary

power feeds from Bonneville Power Authority and auxiliary feeds from Seattle City Light and Puget Sound Energy. This substation is the major electrical substation within Snohomish County. It is considered extremely reliable and coupled with the two independent, high voltage feeders to the plant, will provide redundancy to meet permit requirements for reliability. In addition, a cogeneration facility would be used to supply backup electricity with the capacity to power the plant during under average wet weather loads. Standby diesel generators would be provided for backup power to serve essential life and safety needs, including critical lighting and ventilation. Additional information on both the cogeneration facility and the emergency generator can be found in Appendix 3-A, Project Description: Treatment Plant, of the Final EIS.

Response to Comment C9-75

Cogeneration turbines would be installed onsite and could be used to power the plant if power were lost from the dual electric feeds. The cogeneration facilities would be able to generate power using biogas (which would only produce enough power to run a portion of the plant), or natural gas (which would produce enough power to run the entire plant), during average wet-weather flows. Please refer to the response to Comment C9-74 in this letter.

Response to Comment C9-76

Chapter 3 of the Final EIS incorporates your comment.

Response to Comment C9-77

Please refer to the response to Comments C9-29 and C9-30 in this letter.

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Chapter 9: Environmental Health

1. Section 9.1.2.1

C9-78 This section regards the environmental health risk factors associated with materials stored and used at the treatment plant, yet no mention is made is made of explosive methane gas storage and use. Accidental release and/or catastrophic release are scenarios that should be evaluated, yet the Draft EIS makes no mention of one of the highest possible "environmental health risk factors" posed by the new facility.

2. Section 9.2.2.2

C9-79 Mention is made that the storage of digester gas poses an explosion hazard, yet no mention is made of the conflict with the existing and planned uses in and around the Unocal site (including the planned Edmonds Crossing multimodal terminal). The risk posed to the thousands of people projected to use the multimodal facility by explosive gas storage and use is highly questionable, regardless of the County's position on the beneficial reuse of biosolids.

Chapter 10: Noise and Vibration

1. General Comment: Vibration

C9-80 The DEIS acknowledges that vibration is a construction impact common to all corridors (with impacts being greatest for structures with shallow foundations located near portals[2]), although no quantifiable impacts are identified. The DEIS indicates that specific construction techniques and the resulting vibration levels will depend on the actual designs developed, however the techniques to be used and their potential impacts and mitigation are not described.[3] Additional analysis is necessary to adequately address the specific impacts and mitigations associated with the portal locations proposed for the
C9-81 City of Edmonds. The City contends that King County should provide the opportunity to comment on the adequacy of those mitigations prior to selection of the final portal site/s.

2. General Comment: Noise

C9-82 The City is concerned about noise impacts from construction. All proposed portals in Edmonds are largely characterized by residential development, primarily single family. The Unocal site is surrounded by a residential community, and the exposed nature of the hillside (particularly once the trees are removed) means that noise from the site will easily be heard a much larger community at some distance away (this includes downtown Edmonds, which contains an intense mix of commercial and residential uses).

[2] Page 4-37.
[3] Page 4-37.

Response to Comment C9-78

Please refer to the response to Comment C9-30 in this letter.

Response to Comment C9-79

Please refer to the response to Comment C9-30 in this letter.

Response to Comment C9-80

The City of Edmonds specifies vibration performance standards in Chapter 17.60 of Title 17, General Zoning Regulations, for residential zone property lines that must be met or a variance must be obtained by the contractor. Vibration from portal excavation will be generated primarily by the driving of sheet piling or other means to construct the support system necessary to excavate the portal shaft. These activities may include the installation of slurry walls or tangent piling as well as ground freezing for the deeper (over 200 feet) portals.

The Final EIS text has been revised to discuss in detail the typical portal construction methods and the impacts resulting from these methods as well as the mitigation. Sensitivity of buildings and potential for likely damages from construction related vibration will depend on several factors including soil conditions and age of the building. Older buildings, built before the more stringent seismic codes were developed, may have potential for damage during construction activities like pile driving. These older buildings will need to be addressed during portal site selection and final designs. The City of Edmonds will have the ability to comment on proposed mitigation during their permit process for facilities within their jurisdiction.

Response to Comment C9-81

After a final decision is made on the overall location for the Brightwater System and facilities, King County will work directly with affected jurisdictions and permitting agencies on mitigation strategies and solutions to Brightwater construction and operational impacts. More information

impacts and mitigation associated with noise and vibration can be found in Chapter 10 of the Final EIS.

Response to Comment C9-82

Chapter 10 of the Final EIS includes several specific construction noise mitigating measures to be applied to equipment and the sites at proposed portal locations. Please refer to the response to the Snohomish County Planning and Development Services, Comment S3-132. Removal of existing trees will not have a substantial effect on noise levels in the surrounding neighborhoods. Trees, especially the deciduous varieties, provide little or no excess attenuation of noise, unless the growth is a dense forest of 2,625 feet (800 meters) or more from the source to the noise receiver, per *Noise Control for Buildings and Manufacturing Plants* (Bolt, Beranek and Newman, Inc., 1981).

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Chapter 11: Land and Shoreline Use

1. What will be the height of the tallest structure (using City of Edmonds code requirements for measuring height)?

C9-83 The DEIS does not identify a maximum building height for any of the buildings proposed on the site, although it states that the City's 35-foot height restriction would likely be exceeded. The DEIS is inadequate in addressing concerns about visual and aesthetic impacts without providing this information – what building height is likely -- 45 feet? 60 feet? 80 feet? This analysis should be consistent with the subalternative that is selected prior to further review. Please provide information on how King County will meet the variance criteria required by the City of Edmonds. An illustration of the type of "lid" facility being considered would be helpful. As stated below under Chapter 12: Aesthetics, the lack of illustrations accurately depicting the visual impacts of the proposed 72-mgd facility and combined wastewater/Edmonds Crossing project do not allow a true visual impact assessment of the proposed alternatives.

C9-84

C9-85

2. How is the proposed Unocal site consistent with King County, Snohomish County, and PSRC regional policies for siting essential public facilities?

The DEIS indicates that the Unocal proposal is not consistent with the Snohomish County Comprehensive Plan in that

C9-86

> "the EPF should demonstrate its relationship to local, regional, and state plans, and should be consistent with the adopted plans of the host community, and the EPF should demonstrate its relationship to local, regional, and state plans, and **should be consistent with the adopted plans of the host community** (emphasis added)."

Please provide discussion on how the Unocal alternative may become consistent with this section of Snohomish County's EPFs policies. Further, the DEIS should identify the constitutional authority King County has to condemn property within Snohomish County and the impact on the project should that authority not exist. (See *Cunningham v. Municipality of Metropolitan Seattle* [751F.Supp. 885 (W.D. Wash 1990)])

C9-87

C9-88

3. How is the proposed Unocal site and plant construction consistent with the City of Edmonds Comprehensive Plan and with adopted development regulations?

The DEIS clearly states that the proposed use would be inconsistent with the Edmonds Comprehensive Plan and the uses envisioned by the City for this area. It also states:

> Edmonds Comprehensive Plan designates the Unocal site and adjacent areas to the north, east, and west as Downtown/Waterfront Activity Center, with a Master Plan Development Overlay. Activity centers are intended to provide for a variety of commercial and residential opportunities, including both multi-family and small-lot single family development. The Downtown/ Waterfront Activity Center designation was

Response to Comment C9-83

The building heights for all buildings and structures at both the Route 9 and Unocal sites can be found in Appendix 3-A, Project Description: Treatment Plant. The tallest building at the Unocal site would likely be 45 feet above finished grade. King County will discuss any City Code variance issues during the permitting process, as required.

Response to Comment C9-84

Please refer to the response to Comment C9-18 in this letter, incorporated herein. In the event that Executive Sims selects the Unocal System and includes the "Unocal System Lid" sub-alternative, then King County would discuss with City officials any variance and other land use regulatory issues associated with construction of the lid. This discussion would include acknowledgement that the Brightwater Treatment Plant is an essential public facility, along with consideration of the variance criteria in effect at that time under the City Code.

Response to Comment C9-85

Figures in Chapter 12 of the Final EIS depict the Unocal site with the 72-mgd sub-alternative, and the multimodal lid, which would allow for the Edmonds Crossing Project.

Response to Comment C9-86

A discussion of the regional policy framework under which Brightwater has been planned is provided in Appendix 11-A, Land Use Plans and Policies: Brightwater Regional Wastewater Treatment System, of the Final EIS. Please refer to the response to the Washington State Department of Natural Resources, Comment W3-6.

Consistency with local zoning provisions would be pursued to the extent feasible to permit this essential public facility to be constructed on schedule and with reasonable mitigation. A

rezone of the site to the P zoning district would be required to be consistent with the current Edmonds Zoning Code. The P zoning district requires a conditional use permit for a wastewater treatment plant. Please refer to the Impacts and Mitigation section of Chapter 11 of the Final EIS for more detail.

Response to Comment C9-87

This comment essentially calls for legal analysis, as opposed to environmental information. SEPA does not require that legal analysis be addressed in an EIS. Moreover, non-environmental information, such as the acquisition of property, is ordinarily entirely exempt from SEPA evaluation. Please refer to WAC 197-11-800(5). The commenter should direct any legal inquiries, including this comment, to the King County Prosecuting Attorney's Office.

Response to Comment C9-88

Chapter 11 and Appendix 11-A, Land Use Plans and Policies: Brightwater Regional Wastewater Treatment System, of the Final EIS provide additional information regarding the application of existing land use policies of the City of Edmonds to the Unocal System alternative. The Draft EIS and Final EIS discuss the relationship of the proposal to land use plans, and generally the consistency of the proposal with Edmonds Comprehensive Plan policies and zoning requirements in Chapter 11. If amendments to the Edmonds Comprehensive Plan are necessary for construction of facilities under the Unocal System alternative, King County will work with the City of Edmonds to discuss how best to expeditiously secure, consistent with state law, any necessary amendments to development regulations that may be required to complete the project. King County will develop the information and analyses required beyond that needed for the EIS in the permitting application process.

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> established in an effort to recognize and plan for the coordinated and mutually supporting development of the three dominant land uses in the downtown/waterfront area – the Port of Edmonds, multimodal transportation, and beach/open space uses (City of Edmonds, 2001). Redevelopment of the Point Edwards area, which includes the Unocal site, is a key component in implementing the plan and achieving the City's goal of enlarging the downtown area and economic base.

The DEIS also indicates that placement of the treatment facility would be inconsistent with Edmonds' comprehensive plan policies and zoning requirements for siting public facilities. Since the DEIS addresses all permits required by the project, please provide information on how the proposal will be deemed consistent with criteria required for any comprehensive plan revisions, conditional use and other zoning permits, and any required shoreline permits required by the project. Also, please discuss any alternatives the City may have to enlarge the downtown area and the City's economic base if the Unocal site were to be unavailable for the purpose identified in the existing Comprehensive Plan.

C9-88

C9-89

4. How does the siting of the facility at the Unocal site impact the city's plans to integrate and connect its land uses and expand its tax base consistent with its adopted Downtown Waterfront Plan?

C9-90

As noted, the proposal is not consistent with the existing downtown plan.

5. How will this project impact the construction and operation of the Edmonds Crossing project? If the wastewater treatment plant is consolidated with the Edmonds Crossing project, how will the projects be phased to allow co-location and co-operation to occur? For example, how will initial plant facilities (if located under the ferry holding lanes) be maintained and repaired? How will expansion of treatment plant facilities be completed without disrupting ferry traffic, or vice-versa?

Please provide additional information on how the Brightwater project would affect the Edmonds Crossing project. Section 11.4, page 11-61, states that

C9-91

> Construction of the Brightwater Treatment Plant at the Unocal site would restrict the long-term development and use of the site for a master planned community as envisioned by the City of Edmonds; however, development at the site would not necessarily preclude development of a multimodal transportation facility.

Explain how the siting of one regional facility (Brightwater) can "not necessarily preclude" another already-planned regional facility (Edmonds Crossing) and still be consistent with state law which states that essential public facilities cannot be precluded. It is the position of the City of Edmonds that the Brightwater project would be required to include the Edmonds Crossing project in its design should Brightwater be located at Unocal.

Response to Comment C9-89

The Draft and Final EIS acknowledge that the City's ability to implement its Downtown Waterfront Plan will be limited if Brightwater is located at the Unocal site. If the Unocal site is selected, King County will work with the City of Edmonds to discuss how best to expeditiously conduct any necessary review and secure whatever approvals, legislative changes, or regulatory approvals may be required, consistent with state law, to site this essential public facility and have it operational by 2010. As discussed in the Impacts and Mitigation section of Chapter 11 of the Final EIS, the co-location of Brightwater with the proposed Edmonds Crossing multimodal facility would provide significant mitigation by reducing the need to site each of these facilities at separate locations. In addition, consolidation of Edmonds' smaller treatment plants at the Unocal site could open up these properties for redevelopment. King County will work with the City to identify future development or redevelopment opportunities adjacent to the downtown area.

Response to Comment C9-90

Please refer to the response to Comment C9-89 in this letter.

Response to Comment C9-91

The Brightwater Treatment Plant at the Unocal site has a lid sub-alternative, which allows provision for the Edmonds Crossing project in its design. The lid would accommodate all the facilities currently described for the project in accordance with the Project Update - Alternative for Point Edwards Ferry Terminal and Multimodal Center (brochure from January 2003). The lid, and accommodation of the Edmonds Crossing facility, is further described in Appendix 3-A, Project Description: Treatment Plant, of the Final EIS.

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C9-92 6. How will the loss of land available for housing be mitigated?

Please address how the potential loss of land available for housing at the treatment plant site and the portal sites could be mitigated within the city, given its existing density, vacant land, and land use pattern.

C9-93 7. General Comment: Compensation

The DEIS does not provide information on the criteria that will be used to determine the amount of compensation a property owner might receive if his/her property is purchased for the project. What would the property owner receive in the way of fair market value? relocation expenses? damage repair? compensation for inconvenience suffered?

C9-94 8. General Comment: Displacement of Existing Uses – Commercial and Residential

The economic viability of the City of Edmonds downtown areas would be impacted by not only the construction of the Unocal treatment facility, but also by the loss of commercial land. These are serious impacts to the City.

In addition, since the specific locations of proposed portals within the 72-acre portal siting area have not been defined, it is not possible to identify the site-specific impacts to existing land uses, and therefore the City is unable to evaluate the adequacy of the mitigations proposed. The City is not convinced that, without site-specific analysis, the anticipated worse case analysis fully considers impacts and provides appropriate mitigations to address those impacts.

C9-95 9. Section 11.2.2.1, Essential public facilities siting in Snohomish County and Edmonds (ref. starting at page 11-35, and summarized at section 2.4.3.3)

The Essential public facilities siting criteria and process will require much more than the cursory review included on pages 11-35 and 11-36. For example, the following are not considered:

Factor 4 – The facility should include a significant share of the host community's population.
The Brightwater DEIS states that "Edmonds is not part of King County's service area, nor is Lynnwood" (also ref. section 2.2.2 on page 2-4 and the discussion under section 3.5.1.7). This statement is inconsistent with the analysis presented here. Siting Brightwater at Unocal does not "include a significant share of the host community's population." In fact, the reverse is true. Edmonds treats a significant amount of flow from King County's service area, as King County has no other means of providing

Response to Comment C9-92

The impact to housing capacity is discussed under the Impacts and Mitigation: Unocal System in Chapter 11 of the Final EIS. Current land capacity data for the City of Edmonds and Snohomish County indicate that the City has adequate residential and employment capacity within its UGA to accommodate the remaining portion of the adopted 2012 population and employment growth targets. The development of Brightwater would not preclude the City from meeting its 2012 housing targets.

Response to Comment C9-93

The requesting of information on the amounts of compensation to be offered to property owners is beyond that required in an Environmental Impact Statement, WAC 197-11-448(1). However, King County will follow applicable federal and state laws and King County policies and procedures in acquiring property for the project. Under these provisions, King County is required to offer fair market value for all properties acquired as determined by an independent third-party certified appraisal. Relocation provisions follow federal regulations to accommodate moving and re-establishment of displaced persons and businesses. Please refer to the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 and the King County Property Acquisition and Relocation Web site at http://dnr.metrokc.gov/wtd/row/acquisition.htm for more information.

Response to Comment C9-94

SEPA does not require the evaluation of economic impacts resulting from a proposed action. "SEPA contemplates that the general welfare, social, economic and other requirements and essential considerations of state policy will be taken into account in weighting and balancing alternatives and in making final decisions. The EIS is not required to evaluate and document all of the possible effects and considerations of

a decision or to contain the balancing judgments that must ultimately be made by the decision makers (WAC 197-11-448(1)).”

Recent Level 2 portal screening that was conducted as part of the Brightwater Conveyance Predesign identified candidate portal sites to carry forward for further screening. These sites met engineering needs and minimized environmental and community impacts. The Brightwater Conveyance Predesign Level 2 Portal Screening process is described in Chapter 2 and Appendix 2-B, Portal Screening Level 1 and 2 Documentation, of the Final EIS. Chapter 11 of the Final EIS has been revised to include a more detailed discussion of land use impacts associated with the candidate sites that have been identified along the conveyance corridors for both the Unocal and Route 9 Systems.

Response to Comment C9-95

King County disagrees with the characterization of the facts and conclusions included in this comment. In the event that Executive Sims selects the Unocal System, King County would apply for any necessary and appropriate permits and approvals from the City at that time, for the prompt siting of this regional essential public facility.

treatment to this area. Edmonds also treats flow from Mountlake Terrace, the Olympic View Water and Sewer District, the Ronald Wastewater District, the Town of Woodway, and the City of Lynnwood. 3.

The statement regarding the Agreement for Sewage Treatment is completely misleading. The major issue omitted in the text of Factor 4 is the fact that a large area of King County sends about 1.5 mgd every day to the Edmonds treatment plant. A matching amount of flow is sent for six months per year to King County in compensation for Edmonds treating flow year-round from the County. In 2012, the County will be able to accept matching flows year round. It is not a scenario of Edmonds flows increasing, and King County assisting. Edmonds has the plant capacity and the means to treat its flows and those of its neighbors. The new Brightwater facility will not provide service to Edmonds, or to its neighbors. The Edmonds plant is a $35 million facility that is only 12 years old, with the debt service being fulfilled by 2012. An unacknowledged (and unsolicited) offer
C9-95 to tear down the city's existing regional treatment plant and relocate its flows to an expanded Brightwater plant is speculative and does not serve to meet this criterion.

Factor 7 – The overall concentration of essential public facilities in the County shall be reviewed to avoid an undue concentration in any one community.
Factor 9 – The project must be consistent with local land use regulations.
Factor 10 – The project should be compatible with surrounding land uses.
The description and analysis here is incorrect and inadequate. While the Edmonds treatment plant is not as large as the two existing plants in King County, the Edmonds plant is nonetheless a *regional* facility. In addition, as already pointed out elsewhere in this letter, there is already a concentration of essential public facilities in the vicinity of the Unocal site. Proposing that a small city such as Edmonds host three treatment plants,
C9-96 a ferry terminal, a port, a train station and an area hospital would appear to be an "undue concentration" of essential public facilities in any one community. This is compounded by the fact that several regional parks, the Port of Edmonds, the Amtrak/Sounder commuter rail, the city's wastewater treatment plant, and the ferry terminal all share the waterfront area running north of the Unocal site. The task of accommodating all of these facilities in this small area has been a challenge to the city's planning for many years, and was the subject of a specific Downtown Waterfront plan element adopted as part of the city's Comprehensive Plan in 1995. Adding another regional facility – particularly one of the size and scope of Brightwater – to the mix is contrary to established city plans and the intent behind factors 7, 9 and 10 of the adopted essential public facilities siting process.

C9-97 **Chapter 12: Aesthetics**

1. General comments regarding views analysis.

The figures in Chapter 12 do not adequately verify the DEIS's qualifying statements about how views will be altered by the Edmonds Crossing/lidded sub alternative. There are no maps of how the Edmonds Crossing project will be incorporated into the Multimodal lidded sub-alternative which should actually be part of the basic alternative

Response to Comment C9-96

Please refer to the response to Comment C9-5 in this letter.

Response to Comment C9-97

The park lid is no longer being considered as an option. Figures in Chapter 12 of the Final EIS depict the Unocal site with the multimodal lid and evaluate its impacts. Please refer to the revised Project Description in Chapter 3 of the Final EIS also.

analysis. Without elevations, maps or graphics, that include an Edmonds Crossing component, King County can not substantiate that the park lid sub alternative has similar impacts to the multimodal lidded sub-alternative. Since the multimodal project is not proposing to excavate 2 million cubic yards of material out of the existing hillside, this is certainly not likely to be the case. The Edmonds Crossing project is designed to sit at the lower elevations of the hillside; it would not have the same impact as a treatment facility that removes much of the hillside.

None of the planned Edmonds Crossing components have been incorporated into the Multimodal lidded alternative, thus, the DEIS fails to adequately assess the visual impacts of combining the two facilities while at the same time demonstrating that the functional requirements of the Edmonds Crossing project as planned and designed to date can be met. C9-97

2. Design Guidelines

The Unocal site is one of the most prominent properties on the Edmonds waterfront. The DEIS contains no discussion of how the proposed wastewater treatment plant will be designed to comply with City of Edmonds design guidelines.

The DEIS acknowledges that the facility design is not likely to be consistent with the design guidelines. Please provide additional information on exactly how the proposed alternative deviates from the guidelines, and how the proposal would be designed to meet the guidelines or, if not, what mitigation is proposed. C9-98

Figures in Chapter 12 do not take into account the true heights of the all structures considering the fact that the Edmonds Crossing project should be incorporated into the wastewater treatment plant basic alternative analysis. The document should be revised to truly reflect deviations between the modeled 36-mgd and 54-mgd treatment plants and a combined facility. The same is true if the facility were expanded to a 72-mgd facility.

C9-99 Figures should be created to reflect the true visual impacts of the proposed 72-mgd treatment plant alternative instead of stating "as a result, structures would be closer to the public view" (pg. 12-13). The document lacks a sufficient visual impact analysis of all alternatives studied.

The document states on page 12-13 that the multimodal lidded sub-alternative "would create an additional type of structure and resulting image, specifically the lid and its 30- to 40-foot high perimeter edge and façade." The document fails to include figures of what the combined facility would look like in mass and scale.

Response to Comment C9-98

Aesthetic analysis was conducted from many elevations and at many locations within Edmonds neighborhoods. Chapter 12 indicates that the hillside and treatment facility would be visible and become a dominant focal point from many vantage points within Edmonds.

Chapter 12 of the Draft and Final EIS evaluates the design criteria contained in the City of Edmonds Urban Design Guidelines and identifies 4 of 17 design criteria that the proposed Unocal Treatment Plant would impact. The other 13 design criteria, such as those directed at specific colors, materials, signs and street furniture, as stated in the EIS, are to be addressed in more detail during the design phase of the project—when this level of technical design detail is being formulated. This evaluation also includes a discussion of the Downtown Waterfront Plan and the overall goals related to aesthetics (e.g., character, scale, etc.).

The design mitigation options presented in Chapter 12, define a range of mitigation for both the Unocal and Route 9 sites and from each viewpoint. In so doing, they give guidance to future design efforts that must eliminate or reduce impacts while meeting jurisdictional design and development standards, community preferences, and programs set for each site. Design review and the design review process as established and regulated by the City of Edmonds would direct the proposal to address design criteria in permitting and review submittals.

Chapter 12 presents several photographic and 3-D computer simulated views of existing conditions, facility layout/impacts, and mitigation options. Some views are from nearby viewpoints and others are from further away—these help to visualize the proposed facility within the context of the surrounding environment and city neighborhoods. Also, please refer to Chapter 3 of the Final EIS for more discussion of project design elements and potential mitigation options.

Response to Comment C9-99

Figures in Chapter 12 of the Final EIS depict the Unocal site with the multimodal lid and evaluate its impacts.

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C9-99 The Edmonds Crossing project will have a band like appearance associated with the holding lanes, but have an open appearance as the holding lanes will sit atop support columns. This compares drastically to the massive bulk and scale of the proposed wastewater structures. Whereas the Edmonds Crossing project will be located in the lower yard of the site, the proposed wastewater facility will excavate 2,000,000 cubic yards of soil, and create permanent cuts of up to "130 feet" and retaining walls systems and layouts based on 50-foot vertical wall height increments (possibly "greater" according to pg. 4-54) benched along the steeply sloped hillside. There seems to be an assumption by the treatment plant proponents that there will be no additional visual impacts of combining the wastewater treatment plant with the Edmonds Crossing project.

3. Screening

C9-100 What is the projected timeframe for maturity of site plantings to screen unsightly structures? At what stages will plant materials be planted? What structures are proposed to be screened? What views will be protected?

Additional information on the revegetation schedule and the timeframe for the proposed vegetation to reach an effective screening level should be provided.

4. Public Access

C9-101 How will the site and any public facilities (e.g., view or park areas) located on the site, be integrated with nearby beaches, walkways, and bike trails? How will public access to the beach be handled? There are no drawings/elevations depicting, or narrative stating, how this is to be accomplished.

C9-102

C9-103 Please expand on how access to the beach would be provided and how impacts to persons using the beach would be mitigated from the construction and operational impacts of the treatment plant.

Chapter 13: Light and Glare

C9-104 Table 3-18, page 3-115. The DEIS only compares levels of light and glare generated by the new Brightwater facility to those generated during operation of the former Unocal "tank farm." Unocal has not operated the "tank farm" for many years, and that facility was constructed and operated at a time when the regulations governing that use and the surrounding land uses were very different than those that exist today. There should be a comparison to existing conditions, not conditions that existed when the former tank farm was built and in operation. Consideration must be given to the exposed nature of the Unocal hill site, which enables views to and from the site from an extensive area.

Chapter 14: Recreation

Response to Comment C9-100

A buffer comprised of plants, earthwork and other physical elements (such as fences and walls) is a common means of providing visual separation between land uses and/or roadway corridors; visual relief from large expanses of building or site development; retention of existing vegetation; increases in site permeable area; and increased habitat development. Minimum requirements for landscape buffering or screening are established by zoning ordinances and site development regulations that set specific standards for location of buffer or screening area (usually at site perimeters and between certain land uses), depth and area of landscaped buffer, type and density of plant material, establishment and growth period benchmarks (such as, "…must be of certain height and coverage within 5 years"), and plant establishment and maintenance obligations.

Mitigation in the form of landscape buffers have been illustrated and described for each site and proposed facility in both the Draft EIS and Final EIS. The Route 9 site allows for landscape buffers ranging in size from 210 to 310 feet along the proposed facility's western boundary with Route 9. The Unocal site provides opportunities for perimeter landscape buffers of between 20 and 30 feet. King County will work with the local jurisdiction at the selected site during the permitting process to apply and implement appropriate standards for landscaping, visual screening, and view protection.

Response to Comment C9-101

Under the base alternative considered at the Unocal site, there would be no park areas located at the treatment plant site. In the "Unocal Structural Lid" sub-alternative, a structural "lid" would be constructed over the northern portion of the site to accommodate the proposed multimodal transportation facility, Edmonds Crossing. The multimodal facility would be a public facility, but public access would not be provided to the treatment plant. Public access to the beach would

remain the same as without the treatment plant at the Unocal site; the main beach access is via Admiral Way.

Response to Comment C9-102

While public access is not formally part of the project description at this time, King County is committed to appropriately mitigating all impacts associated with disturbance to Marina Beach Park, the Port of Edmonds Marina, Olympic View Park, Edmonds Marsh, City Park, and other recreational amenities in the area. King County will work with the City of Edmonds to identify short- and long-term recreation mitigation opportunities, which could include, but would not be limited to, opportunities to enhance public access.

Response to Comment C9-103

Access to recreational areas during construction would be identified during the permitting process. Public access to the beach would remain the same as without the treatment plant at the Unocal site when construction has been completed; the main beach access is via Admiral Way. The impacts to people using the beach from the construction and operation of the treatment plant would be mitigated, as described in Chapter 14 of the Final EIS. Construction mitigation would include measures that minimize noise, dust, odor, and traffic impacts to the surrounding area. Buffers and landscaping would be provided to reduce view access of the facility.

Response to Comment C9-104

The fieldwork for the Draft EIS was performed in 2002, while the tank farm was no longer in operation. These values and observations have been used to evaluate the impact of the Brightwater proposal. References to the tank farm illumination levels have been modified in the Final EIS to reflect this; refer to Chapter 13, Impacts for the Unocal System.

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C9-105 The DEIS needs to clarify its description of the Edmonds park facilities in the vicinity of the Unocal site. City of Edmonds has a number of regional park facilities. All seven waterfront parks are regional facilities (Marina Beach Park, Edmonds Fishing Pier, Olympic Beach Park, South County Senior Center and waterfront park, 144 Railroad Tidelands, Bracketts Landing both North and South.) The Edmonds Marsh is also classified as a regional facility (it serves as open space and has a small nature trail along a portion of its border).

C9-106 Edmonds' Marina Beach Park, Olympic Beach Park, the Fishing Pier and Bracketts Landing Park South are all protected by the Revised Code of Washington from conversion from public park use. Marina Beach Park was purchased with Washington Wildlife & Recreation legislative funding administered by the Interagency Committee for Outdoor Recreation. A Deed-Of-Right filed in Snohomish County by the City of Edmonds protects the Marina Beach Park property (all property located north of the old Unocal pier) for public park purposes. Public dedication of the site in March 2001 protects it for public park purposes and provides vacation protection and standing under legal court action. The adjacent Washington State Department of Natural Resources tidelands have been dedicated to public recreational use.

C9-107 Chapter 14 has an incomplete listing of the waterfront parks in Edmonds. Edmonds' park and recreation sites are surrounded by the Unocal site. Shoreline parks along the Puget Sound (Marina Beach Park, Olympic Beach Park, Edmonds Public Fishing Pier, South County waterfront Senior Center, 144 Railroad Avenue Public Tidelands, Bracketts Landing Park South and North, plus the Edmonds Underwater Park) and the adjacent Class I Edmonds Marsh Wetlands point to the sensitivity of the Edmonds waterfront, its high level of public access and use, and the need for a high level of natural resource protection and preservation. Mitigation of any impacts on these regional resources are vital in response to the siting the Brightwater Plant on the Unocal property.

C9-108 In understanding these protections the DEIS needs to address impacts to the Marina Beach Park property. When 2-million cubic yards of soil removal is required and the construction of a new transmission pier across, over or under Marina Beach Park is contemplated, conversion of the site "out of public recreational use" will be required. Protection of the potential environmental impacts must be included in the mitigation regarding the potential damages of the elevated causeway. Dust, noise, accidents, storms, air quality, effects of tides, contaminants, impacts to the beach, the recreational user and the habitat must all be considered. How many years will the site and nearby beaches be closed for public use?

The DEIS states that the "4.5 acres west of the railroad tracks potentially proposed for temporary use as an outfall construction staging area and 2 acres of the Pine Street right-of-way, which would be relocated out of the way of construction."

Response to Comment C9-105

Chapter 14 of the Final EIS includes text clarifying that Marina Beach Park, Edmonds Fishing Pier, Olympic Beach Park, South County Senior Center and Waterfront Park, 144 Railroad Tidelands, Bracketts Landing both North and South are designated as Regional Parks. Edmonds Marsh, is designated as Natural Open Space in the *City of Edmonds Parks, Recreation and Open Space Comprehensive Plan* (2001) and is stated as such in Chapter 14.

Response to Comment C9-106

Construction activities associated with Outfall Zone 6 could temporarily affect Marina Beach Park. Park users would be indirectly affected from increased levels of dust, noise, odors, and traffic associated with construction vehicles and machinery. Access to the park would be maintained. During installation of certain segments, but not continuously, people may not have direct access to the park. The public would be redirected to the park through signage and a possible temporary detour. Please refer to Chapter 17 of the Final EIS for a description of transportation management plans and other mitigation measures that would be used during the construction phase of the Brightwater System to maintain traffic flow and access to properties affected by construction.

Response to Comment C9-107

Please refer to the revised text in the Impacts and Mitigation section in Chapter 14 of the Final EIS, for a discussion of impacts to recreational facilities in the general vicinity of the proposed wastewater treatment plant sites.

Response to Comment C9-108

The Brightwater Treatment Plant would be located east of the Burlington Northern Santa Fe (BNSF) railroad tracks. However, the proposed outfall alignment for the Zone 6 outfall crosses through Marina Beach Park along the northern side of the existing pier. The overall construction duration for

the outfall is about 1 year, but the expected construction duration for the portion that will affect the Marina Beach Park is about 6 months.

The actual staging area (where materials and equipment would be stored) at Zone 6 would be located on the upper portion of the Unocal site. The onland open-cut pipe alignment would extend along the road accessing the parking lot for Marina Beach Park and into the parking lot itself. The southern parking area will be temporarily removed during construction; the northern parking lot would remain open, but some parking spaces in the northern parking lot may or may not be temporarily removed during construction. It is anticipated that about 40 feet of the grassy park area immediately north of the existing pier would be needed for construction staging.

The construction zone width would be approximately 60 feet. As with the onland work, there is a construction zone width that people would need to stay clear of. The construction zones would be signed and fenced or roped off to keep people out. Construction of this outfall segment would last approximately 6 months. After the 6-month construction period, the existing parking lot and park area would be restored. Onland construction would last up to 2 months. Inwater construction, in the shallow nearshore area would last up to an additional 3 months. The inwater work is expected to be performed by barges and accessed from the water, but it may have a visual impact on the park.

Park users would be indirectly affected by increased levels of dust, noise, odors, and traffic associated with construction vehicles and machinery, however, access to the park would be maintained. During installation of certain segments, there may be no access to the off leash area south of the pier. At other times, the public may be redirected to the park through signage and a possible temporary detour. Please refer to Chapter 17 of the Final EIS, for a description of construction equipment access routes and other mitigation measures that would be used during the construction phase of the Brightwater System.

The Impacts and Mitigation: Unocal System section in Chapter 7 of the Final EIS, describes relevant mitigation measures at the Zone 6 outfall location. In addition, Chapters 4 and 6 discuss mitigation measures intended to protect the environment associated with proposed outfall locations for both the Route 9 and Unocal Systems.

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C9-108 In section 14.2.2.1, the second paragraph states that "1-2 acres of Marina Beach Park would be used as a staging area for both the outfall and barge dock construction. If two acres are used, the entire park would be essentially unusable.

C9-109 Proposed mitigation under item 14.3.1 is inadequate. Specifically, how does the project intend to move "some recreation activities" temporarily to another location as proposed?

C9-110 Use of the Marina Beach Park is unique, includes boat launching and is connected to the Port of Edmonds via Admiral Way and a pedestrian bridge. Bird watching within the Edmonds Marsh can not be relocated. Contrary to KC's statements that Permanent facilities would be designed to blend with adjacent properties, this is physically impossible as demonstrated by Figures 12-19 through 12-26. These figures clearly depict large massive imposing structures into an area surrounded by five recreational amenities. Cuts into the hillside of up to 130 feet in elevation, stepped at 50 foot intervals cannot be described as "blending into" the surroundings.

C9-111 The DEIS inadequately outlines how the displacement of park land for 4-5 years, and the negative displacement or impact of up to 100,000 visitors per year at the site will be mitigated. There have been no alternative areas defined for where visitors will go, where they could park, what areas are equivalent for use that are the same type of area or quality of experience one gets while visiting the Marina Beach area.

Chapter 16: Transportation

C9-112 1. Describe your proposed Commute Trip Reduction (CTR) program.

The DEIS indicates that offsite parking would be provided for construction workers who would be bused to the construction site. Please indicate the location of this offsite parking and evaluate any impacts to that site. Without a detailed analysis, including the location of parking and identification of routes to and from the parking site, an evaluation of impacts and mitigation cannot occur. This is particularly important if any existing park-and-ride locations are considered for construction workers, since this would impact existing park-and-ride users and surrounding streets and parking resources.

C9-113 2. The City of Edmonds is currently designing the 220th Street Improvement Project. All attempts should be made to keep all construction activity away from this street.

Please address any impacts of the proposed project on the 220th Street Improvement Project.

C9-114 3. Will there be any disruption of rail traffic during construction on the hillside? How will this be mitigated?

Please provide information regarding construction on the hillside at the Unocal site and any impacts to rail traffic that would be likely to occur, and how they would be mitigated.

Response to Comment C9-109

The mitigation measure referring to temporary relocation of recreational activities was intended to generally describe mitigation of sports fields and shoreline activities within recreational facilities along the proposed corridors. If construction activities were to temporarily disrupt scheduled or leisure activities at a sports field, a nearby facility would have to accommodate the sporting activity. King County will work with affected park and recreation service providers to discuss mitigation options for the temporary relocation of activities. Shoreline activities, including boat launching and shoreline enjoyment, may have to be temporarily diverted to other nearby facilities. If the dog park at Marina Beach Park were selected as a location for a Brightwater structure, shoreline access for dogs would likely be off limits throughout the duration of construction.

Chapter 7 acknowledges that construction activities would adversely affect birds at Edmonds Marsh during construction. The habitat at Edmonds Marsh would not be physically modified as a result of construction.

Response to Comment C9-110

The Draft EIS disclosed that the major aesthetic impact of the plant would be the "large scale and prominence of the facility in relation to existing uses and natural settings in the vicinity." As discussed in Chapter 12 of the Final EIS, beyond the physical dimensions of the facility, a number of steps will be taken to address the appearance of bulk and scale. These include façade treatments, establishment of buffers around the perimeter of the site, and retention of existing vegetation where feasible. The Unocal Structural Lid sub-alternative, described in Chapter 3 of the Final EIS, would help to further blend the treatment plant with its surroundings. Please refer to Chapter 12 of the Final EIS for more information on aesthetic impacts and mitigation.

Response to Comment C9-111

Please refer to the response to Comment C9-108 in this letter.

Response to Comment C9-112

A detailed analysis of three possible remote offsite parking locations with shuttle bus service for Unocal site construction workers and the resulting impacts has been included in Chapter 16 of the Final EIS. Two of the candidate sites are within the vicinity of the Interstate 5/SR-104 Interchange. The third site is located along 236th Street SW near SR-99. The impact analysis is included in Chapter 16 of the Final EIS. The locations of the sites and access routes between the Unocal site and these lots were identified. No existing park-and-ride locations were considered. Please refer to Appendix 16-B, Transportation Impact: Plant Sites and Conveyance, for greater detail.

Response to Comment C9-113

Construction of the proposed Brightwater Treatment Plant at the Unocal Site would not be expected to create any impacts to the City of Edmonds' corridor improvement project along 220th street. All construction schedule and potential conflicts would be coordinated with the City during the permitting process and prior to the start of construction.

Response to Comment C9-114

No disruption of rail traffic would occur during construction at the Unocal site. Please refer to Chapter 16 of the Final EIS for additional information.

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4. Section 16.1.2.1, Unocal Site

C9-115 SR-104 is a designated Highway of Statewide Significance (HSS). SR-104 is also the only legal truck route to the Unocal site and the southern portion of Edmonds. Significant traffic conflicts could result from the Brightwater project, both during and after construction. This is a particular concern during peak periods and when the ferries are loading or unloading at the Edmonds terminal.

C9-116 There is an inadequate discussion of the Edmonds Crossing project under "Planned Transportation Facilities" on page 16-10. For example, ferry traffic is expected to increase by more than 50%, and the project is expected to cost more than $100 million to construct.

5. Section 16.2.3, Treatment Plant Sites

C9-117 Mention is made of various truck trips, including those for biosolids/grit and chemicals. Isn't a spill containment and counter measure (SPCC) plan required? Will there be a need to have an evacuation plan prepared for the city or the Unocal facility, particularly when a multimodal transportation facility is located on the Unocal site? How will hazardous material shipments be brought in? What specific safety measures will be in effect?

6. Section 16.2.3.1, Construction Impacts

C9-118 On page 16-36, the second paragraph states that the realignment of Pine Street is not expected to cause any changes in intersection operating LOS or long delays during peak traffic conditions." This is not true. Realignment would be creating a new delay at Pine Street that is not present now; a traffic signal would be required.

C9-119 Truck traffic will be more than doubling in this portion of Edmonds. What method will be used for storing trucks and buses (for workers) on-site to avoid conflicts with ferry traffic? Where is a calculation showing the amount of site area needed for truck or bus storage, and that the amount of site area needed for storage is adequate? Otherwise, it would have to be assumed that trucks and buses will conflict with and cause delays in the local traffic pattern, especially during ferry loading and unloading. Conflicts with local pedestrian or bicycle traffic could result in the need to provide alternative walkway or bikeway routes during construction.

C9-120 The heavy vehicle traffic associated with construction of the portals and the Unocal treatment facility will damage City streets, beyond the level of wear and tear that the City could anticipate under normal traffic conditions. The DEIS indicates that streets will be restored to "pre-existing or better conditions." Edmonds will require all street repairs (including related sidewalk or other facilities) to meet local standards. The DEIS should identify how pre-existing street conditions will be inventoried prior to construction, and how this inventory will be agreed upon by the City.

Response to Comment C9-115

Traffic conflicts could result from the expected truck traffic accessing the Unocal site. Mitigation measures are included in Chapter 16 of the Final EIS that would reduce traffic conflicts along SR-104. Development of a remote truck holding area is a possible measure to minimize potential delays and queues between ferry/local traffic and trucks during construction at the Unocal site. Three options have been identified to provide the necessary storage for trucks queuing to enter the Unocal construction site. Also, a remote offsite construction employee parking area with shuttle bus service has been considered to further reduce traffic impacts to SR-104. Please refer to the Appendix 16-B, Transportation Impact: Plant Sites and Conveyance, of the Final EIS for greater detail.

Response to Comment C9-116

The discussion of the Edmonds Crossing project has been expanded in Chapter 16 of the Final EIS.

Response to Comment C9-117

Dewatered biosolids and chemicals would be transported from the treatment plant to field application sites in custom-designed dump trucks and trailers. *The Biosolids and Grit Haul Contingency Handbook* (King County, 2001) describes steps to be taken in the event of a spill or collision. Hazardous materials response teams are not required because of the low toxicity of biosolids. Drivers are required to take containment measures to prevent any spills from entering water bodies.

It is not expected that an evacuation plan would be needed for the City. Safety measures in the treatment plant would include, at a minimum, spill control, secondary containment, ventilation, and fire extinguisher systems.

Brightwater Treatment Plant design would incorporate all applicable requirements, thus reducing the potential

environmental risk to levels considered acceptable by the UFC. The Brightwater Treatment Plant would be designed in accordance with all applicable Ecology and UFC requirements, which include spill containment requirements. Areas used for loading and unloading materials would include similar spill containment. Emergency spill response procedures would be in place at all facilities, and employees would be trained to respond appropriately. Please refer to Chapter 9 of the Final EIS for discussion of hazardous material shipments, including biosolids/grit and chemicals, and emergency spill procedures.

Response to Comment C9-118

A temporary roadway would be constructed ahead of the realignment of Pine Street to provide direct access between the Woodway neighborhood and SR-104. The proposed realignment of Pine Street would be fully constructed prior to switching over the traffic from the existing roadway. Minimal impacts would be expected during the switching of traffic. Once constructed and operational, the realigned Pine Street would not necessarily require installation of a traffic signal. The installation of a traffic signal would not be expected based on the estimated level-of-service (LOS C). A signal would not be installed unless it was warranted.

Response to Comment C9-119

Please refer to the response to Comment C9-115 in this letter. The calculation showing the amount of site area needed for storage of truck and shuttle buses is provided in Appendix 16-B, Transportation Impact: Plant Sites and Conveyance. Flaggers and off-duty police would be deployed at key locations to avoid conflicts and minimize delays to ferry traffic and provide safe access for pedestrians and bicyclists.

A traffic plan addressing mitigation measures would be prepared for all agencies affected by construction and is included as a mitigation measure in the Final EIS. This plan would include time-of-day restrictions, necessary improvements to the roadway network, types of closures, pedestrian and bicycle detours, traffic routing/circulation management, and traffic control measures for safety on the affected roadways. These measures would be finalized by King County and would be coordinated with affected agencies during permitting.

Response to Comment C9-120

All roadways and non-motorized facilities impacted by the development of the Brightwater project would be restored to pre-construction or better conditions. King County would work with each local jurisdiction to determine the method that would be used to inventory street conditions prior to construction and the level of improvements for restoration during the permitting process.

City of Edmonds Comments on the
Brightwater Regional Treatment System
Draft Environmental Impact Statement
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Chapter 17: Public Services and Utilities

i. Fire

C9-121 1. Describe the highest structures contemplated and the emergency access for high-angle rescue and extrication incidents.

C9-122 Identify who is responsible for confined space rescue at the site during construction, start-up and completion phases.

C9-123 Describe below grade structures and the emergency access to confined space and below grade rescue and extrication incidents.

C9-124 The DEIS does not provide detail on the buildings proposed, and therefore the City is unable to evaluate the impacts, the necessary emergency equipment to service the buildings, and mitigations necessary to provide emergency services. Please provide specific information on the sizes and designs of the building, and the types of interior

C9-125 spaces, the possible hazards that may require specialized emergency equipment, and what agency would be responsible for conducting such rescues.

2. Describe the evacuation plan for the residential, commercial, and recreational populations in the immediate area of the site in case of an on site hazardous materials release. Include consideration of surface road capacity, emergency response agencies utilizing the same access points as populations being evacuated, hillside slope and drainage, wind and water currents.

C9-126 If there will be an on site industrial fire brigade, describe the level of staffing, training and certification and the type of emergency apparatus, tools and equipment.

Describe the disaster response agency for the site.

Please provide information on the treatment facility's proposed emergency evacuation plan as described, identify if there will be an on-site fire brigade or other methods by which an emergency would be handled, and identify the proposed the disaster response agency for the treatment plant, and how any disaster response would be developed.

C9-127 3. Does the Unocal site present any difficulties for planning for terrorist threats or other more general security considerations?

C9-128 Please provide specific information on the facility's plans to ensure security.

4. King County has identified the creation of public parks and other public amenities associated with the proposed Unocal location. Which public agency will be responsible for their ongoing maintenance and operation?

Response to Comment C9-121

The highest structures will be the digesters and the solids handling building, which would be 40 feet and 35 feet above ground, respectively. Access for emergency vehicles would be available on the facility roads that would run alongside each building, which would facilitate high-angle rescue and extrication incidents. The digesters would not typically have operators working at the top of the structure. Operators would regularly be working in the dewatering facility located on the top floor of the solids handling building. Both structures would have stairs to the top elevation. The digester stairway would be on the exterior, the solids handling building stairway on the interior.

Response to Comment C9-122

During construction and start-up, the contractor is responsible for providing a Confined Space Program that meets WAC 296-155, Safety Standards for Construction Work. In the transition from plant start-up to and including plant operations, when WTD staff is involved, WTD will implement its Confined Space Program, with personnel trained in entry and rescue procedures relating to its facilities.

Response to Comment C9-123

Below grade structures include several buildings, piping and equipment galleries, primary clarifier tanks, membrane tanks, aeration basins, reuse water tanks, and digesters. The plant sections included in Appendix 3-A, Project Description: Treatment Plant, of the Final EIS depict the depth of all below-grade structures. All below-grade structures would be designed with proper ingress and egress according to latest copy of the Uniform Building Code (UBC) and the International Building Code (IBC), or subsequently adopted codes at the time of final design. The emergency access procedures would be defined during final design.

Response to Comment C9-124

Specific information on the sizes, designs, and types of interior spaces of the buildings is provided in Appendix 3-A, Project Description: Treatment Plant. The buildings that would be located on the treatment plant site include Influent Pump Station, Effluent Pump Station, Headworks, Solids Handling Building, Membrane Support Building, Odor Control Buildings, UV electric room, Administration Building, Maintenance Building, Community-Oriented Building, and the Chemical Building.

Response to Comment C9-125

Please refer to the response to Comment C9-122 in this letter for a discussion of specialized emergency response procedures. Once the final Preferred Alternative is selected, additional design details such as the designs of buildings and types of interior spaces will be developed. Such details are not available or appropriate for an EIS level of analysis.

Response to Comment C9-126

The King County Office of Emergency Management is in the process of developing a Regional Hazard Mitigation Plan in conjunction with participating cities along with school, water, sewer, utility, and fire districts. This plan has not yet been fully developed or implemented. This plant is required by the Federal Emergency Management Agency and addressed mitigation of natural disasters.

The King County Emergency Management Plan outlines the framework under which County departments respond to emergency disaster situations. The Emergency Support Function 3 portion of this Plan outlines King County's roles and responsibilities relating to the restoration and continuity of public works functions, including wastewater treatment, in the event of natural disasters or emergencies such as the release of hazardous materials (King County, 2003). Division-specific emergency procedures are also contained in the Wastewater Treatment Division's Emergency Response Plan (King County, Publication 280). Each treatment plant has its own version of this plan, and a specific version for the Brightwater Treatment Plant would be developed. These procedures are used to handle fires, medical emergencies, hazardous material releases, power outages, violence, terrorist acts, earthquakes, and other natural disasters.

General evacuation procedures and coordination with local response agencies are outlined in King County Emergency Management Plan, Emergency Support Function 24. Specific evacuation procedures for potential hazardous material releases at the Brightwater Treatment Plant will be developed in the facility's version of the Wastewater Treatment Division's Emergency Response Plan. Existing King County wastewater facilities do not maintain an onsite industrial fire brigade. King County relies on local fire department response. For additional discussion of emergency response services, please refer to the response to Comment C9-122 in this letter.

Reference:

King County. 2003. *King County Emergency Management Plan: ESF 3, Surface/Wastewater and Solid Waste.*

Response to Comment C9-127

In response to recent world events, King County is in the process of developing and implementing a new security program for its wastewater facilities. This program has not yet been fully implemented or documented. Operation of the Brightwater facilities would incorporate measures identified by the new security program as well as typical security measures currently used at the West Point and South Treatment Plants. There are currently no security issues identified specific to the Unocal site that would not be addressed by the security program currently being developed for all of King County's wastewater facilities. Security measures include restricted access to treatment plant and conveyance facilities (pump stations, regulator stations, etc.). Offsite facilities, such as pump stations are kept locked, when King County staff is not present at the facility. Fencing or high-berm walls with gated ingress and egress secure treatment plants. During operating hours, visitors are required to check in at the plant administration building and to be escorted by plant employees when visiting facilities onsite. Security cameras are located at the access gates. After operating hours, access gates are closed and locked, and in the past, security personnel have been employed at the treatment plants. In the event of criminal

trespassing, treatment plant staff rely on local police to respond (Dawson, M., personal communication, 2003).

Reference:

Dawson, Mick. 2003. Telephone conversation on June 17, 2003. Senior Operator, West Point Treatment Plant. King County Department of Natural Resources and Parks, Wastewater Treatment Division.

Response to Comment C9-128

King County would coordinate with identified participants in developing an appropriate operation and maintenance program for any community facility that is developed at the Brightwater Treatment Plant site, unless otherwise specified in a community mitigation agreement. Please note that the Unocal subalternative to construct a lid no longer includes developing a public park on the top of the lid.

City of Edmonds Comments on the
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C9-128 Since the "lid" subalternative is being considered, additional information is necessary to evaluate its impacts on the community. Please provide the requested information and discuss management of these parks and public amenities.

5. General comments regarding fire services and concerns.

C9-129 Please refer to the attached memoranda from the Edmonds Fire Chief. These detail a number of concerns and questions regarding the analysis and information contained in the DEIS. Each of these concerns should be addressed.

ii. Water/storm water

C9-130 1. What would be the need for the Brightwater plant if King County allowed the Alderwood Water District to build treatment capacity for the flow it currently sends to King County?

This question is not addressed in the DEIS. What are the flows currently sent from the Alderwood Water District to King County? How do these flows compare to the design capacity of the Brightwater treatment plant?

iii. Sewer/solid waste

C9-131 1. What is the cost difference for operation and maintenance between the two different types of conveyance lines proposed as part of the construction of the wastewater treatment plant?

This question is not addressed in the DEIS. Although King County has provided some of these figures in its public information materials, after refining the proposal/s in the final EIS, please provide the cost difference for the conveyance lines for both the Unocal site and the Route 9 site alternative alignments.

C9-132 In Section 17.1.2.1 on "Wastewater," it should be noted in the second paragraph that the City of Edmonds also provides services to the Ronald Wastewater District.

The comments contained above, with the attached Fire Department memos, constitute the city's comments at this time. We will be interested in reviewing and commenting on additional environmental documents and information as they are made available to the public. Should you have any questions regarding the above comments, please don't hesitate to contact me at the indicated address.

Sincerely,

Robert Chave, AICP
City of Edmonds Planning Manager / SEPA Responsible Official

Response to Comment C9-129

Please refer to the responses to Comments C9-133 through C9-161 from the Fire Chief.

Response to Comment C9-130

In its recent Sewer Comprehensive Plan, Alderwood Water and Sewer District investigated sending its Swamp Creek and North Creek basin flows to the District's Picnic Point Treatment plant instead of the King County System for treatment. After careful consideration of the various service strategies, including the cost for additional pump stations, conveyance, and treatment plant upgrades, the District decided to remain with its existing configuration and construct a new 6-mgd plant at Picnic Point (upgrading its existing 3-mgd capacity). Provisions to expand Picnic Point to 9 and 12 mgd were also included in this strategy. Additionally, with completion of the Bear Creek Trunk in 1998 at the intersection of SR-9 and 223rd Street SE, more Alderwood District flows were directed to King County treatment facilities. Thus, to eliminate flows going from the Alderwood District to King County, a number of additional pump stations, conveyances, and increments of treatment capacity at existing treatment plants would be required to move existing flows to an upgraded or a new District plant. For additional information on how Alderwood Water District flows would affect the Brightwater design, please refer to the response to Comment C9-36 in this letter.

Response to Comment C9-131

Cost and economic impacts are not topics analyzed under SEPA and therefore are not addressed in the Brightwater EIS. "SEPA contemplates that the general welfare, social, economic and other requirements and essential considerations of state policy will be taken into account in weighing and balancing alternatives and in making final decisions. The EIS is not required to evaluate and document all of the possible effects and considerations of a decision or to contain the

balancing judgments that must ultimately be made by the decision makers" (WAC 197-11-448(1)).

However, once a final decision is made on the location for the Brightwater System, King County will work directly with affected jurisdictions and permitting agencies on mitigation strategies and solutions to the construction and operational impacts. As part of the overall decision process, King County is revising the cost estimates (dated November 2002) for the Brightwater alternatives; the revised estimates will be updated at the end of 2003 and will be available on request by contacting the Brightwater project at brightwater@metrokc.gov, or 206-684-6799, or toll-free 1-888-707-8571.

Response to Comment C9-132

The Affected Environment: Unocal System in Chapter 17 of the Final EIS has been modified to include the Ronald Wastewater District as receiving services from the City of Edmonds.

EDMONDS FIRE DEPARTMENT MEMORANDUM

RECEIVED
FEB 4 2003
ENVIRONMENTAL PLANNING DIVISION

Date: December 20, 2002

To: Rob Chave, Planning Director

From: Thomas J. Tomberg, Fire Chief

Subject: Brightwater Draft Environmental Impact Statement

Below are Fire Department comments on the Brightwater Regional Wastewater Treatment System Environmental Impact Statement Dated November 2002.

Volume I

C9-133 It is a challenge to pose specific questions since the information, impacts and mitigation measures contained in the EIS are very broad and general with little specificity. Presumably, once the final site is selected, specific aspects of site development will be pursued by King County representatives and the agency having jurisdiction.

C9-134 The Fire Department respectfully resubmits the June 18, 2002 memorandum titled Identifying Brightwater EIS Issues (enclosed) since most of the issues identified are not addressed beyond an occasional cursory reference.

C9-135 The document generally addresses serious site safety issues such as earthquakes, liquefaction, landslide potential, slope instability, and floods that will affect response times and access.

C9-136 The Fire Department does not have the staff to monitor the safety issues as they arise during the construction phase of the project.

C9-137 Throughout the document there are generic references to the Edmonds Fire Department, the Fire Prevention Division, Uniform Fire Code, and to OSHA and WISHA as responses to identified problems including but not limited to emergency response, hazardous materials releases, spills, and technical rescue. There are no references to NFPA 820 Standard for Fire Protection in Wastewater Treatment and Collection Facilities or any other national standard addressing the construction and operation of these types of facilities. The EIS does, however, cite compliance with the 1997 Uniform Fire Code under various subjects.

C9-138 3.5.1.2. Emergency access to 32 of the 53 acres that would use a series of retaining walls and terraces to prevent landslide and erosion.

OFFICE OF THE FIRE CHIEF

Response to Comment C9-133

Please refer to Chapter 17 in the Final EIS for a more detailed description of impacts and mitigation measures associated with public services and utilities for the Brightwater project. After the final selection of the treatment plant site and conveyance system, King County will coordinate with local jurisdictions and agencies to ensure mitigation measures are effective and acceptable means to minimize impacts.

Response to Comment C9-134

Thank you for your comment.

Response to Comment C9-135

Thank you for your comment.

Response to Comment C9-136

Construction of the Brightwater Treatment Plant would not require local fire department staff onsite to monitor safety issues. It is not anticipated that additional fire and medical staffing for local emergency service providers will be required as a direct result of the Brightwater project. Please refer to the response to the Snohomish County Fire District No. 7, Comment S1-2, for additional information.

Response to Comment C9-137

The Impacts and Mitigation Common to All Systems section in Chapter 17 has been revised to include a discussion of the Brightwater Treatment Plant's compliance with the National Fire Protection Association (NFPA) 820 Standard for Fire Protection in Wastewater Treatment and Collection Facilities.

Response to Comment C9-138

Emergency access to the treatment plant located at the Unocal site would be provided using the service roads that

traverse all three terraces of the facility. Please refer to Appendix 3-A, Project Description: Treatment Plant, of the Final EIS for treatment plant layout drawing showing access roads.

C9-139 3.5.1.3. Emergency access to barge dock to deliver construction materials and remove excavated materials.

C9-140 3.5.1.8. Emergency access if the sub-alternative to place a structural lid over the plant to allow future multiple uses is implemented.

C9-141 3-7. Emergency access during the five-year construction period to the Downtown, Port of Edmonds, waterfront area, residential and commercial neighborhoods east and south of the site, and to the contract jurisdiction of Woodway.

C9-142 3-89. Reference only to UFC 1997 regarding design and construction when other national standards, such as NFPA 820, Standard for Fire Protection in Wastewater Treatment and Collection Facilities, is available.

C9-143 3-132. Emergency access under Traffic Management Plan.

C9-144 3-139. Increased emergency response times impacting services to the Edmonds population.

Volume II and Technical Appendices

C9-145 These two documents are similar to Volume I with regard to the lack of specific detail. There are, however, more references to local codes and national standards including references to the Uniform Fire Code, specifically Article 80, the section addressing hazardous materials, and National Fire Protection Association standards (NFPA).

C9-146 The concerns identified in our June 18 document adhere, with the addition of rapid response and delayed access issues to portals and conveyances (below grade emergency incidents) during the construction and operations phase.

C9-147 We continue to be concerned about delayed emergency response throughout the project area, and to locations adjacent and south of the site, which the document identifies in several locations despite their plan to provide advance notice to emergency response agencies regarding detours, delays, and road blockages.

Enclosure

Response to Comment C9-139

The barge dock is no longer part of the Brightwater project.

Response to Comment C9-140

Emergency access to the treatment plant located at the Unocal site with the lid sub-alternative would be provided using the service roads that traverse all three terraces of the facility. Emergency access to the lid would be provided using the lid access road, please refer to Appendix 3-A, Project Description: Treatment Plant, which shows lid access roads.

Response to Comment C9-141

If the Unocal site is selected as the location for the Brightwater Treatment Plant, King County would coordinate with the Cities of Edmonds and Woodway and representative fire and emergency service providers to ensure emergency access routes to downtown, Port of Edmonds, the commercial waterfront, and adjacent residential areas are maintained during the construction phase of the project. Please refer to the response to the Snohomish County Fire District No. 7, Comment S1-2.

Response to Comment C9-142

Please refer to the response to Comment C9-137 in this letter.

Response to Comment C9-143

Final plan approval would be coordinated with the affected local agency, including the City of Edmonds. Please refer to the response to Comment C9-119 in this letter.

Response to Comment C9-144

Please refer to the response to the Snohomish County Fire District No. 7, Comment S1-2.

Response to Comment C9-145

Thank you for your comment.

Response to Comment C9-146

Please refer to the response to the Snohomish County Fire District No. 7, Comment S1-2.

Response to Comment C9-147

Please refer to the response to the Snohomish County Fire District No. 7, Comment S1-2.

EDMONDS FIRE DEPARTMENT MEMORANDUM

Date: June 18, 2002

To: Rob Chave, Planning Manager

From: Thomas J. Tomberg, Fire Chief

Subject: Identifying Brightwater EIS Issues

Thanks for the opportunity to identify Brightwater EIS issues. The issues below integrate those you previously listed under (d) Public services and utilities i. Fire in the June 11 document. I hope you support that integration. Please contact me if you have any questions, and, as the primary author of the document, please feel free to edit or reformat the content.

Below you will see a reference to NFPA 820. Although it is our policy to only reference NPFA Standards and cite them as guides, it may be in the City's interest to consider adopting NFPA 820. What effect that would have on the Lynnwood and Edmonds facility is unknown. Thanks. TT

C9-148
- The Fire Department is concerned with multiple aspects of response involving the Brightwater facility during development and construction, start-up, and operation and processes to include emergency incidents that occur on site, emergency incidents that migrate off site, and emergency incidents that occur adjacent to the site. The main areas of emergency concern are fire, explosive hazard, and hazardous materials release as related to life, property, and protection of the environment. Areas of special interest include explosion and the threat to structural integrity, ventilation, use of corrosion-resistant materials, flame spread, smoke generation, release of toxic products and biological hazards, the transportation, conveyance, storage and use of hazardous materials and hazardous processes.

C9-149
- The Department anticipates the Brightwater facility to be in full compliance with the requirements of NFPA 820 Standard for Fire Protection in Wastewater Treatment and Collection Facilities.

C9-150
- Describe the "agency having jurisdiction" over the Brightwater site.

C9-151
- Describe what agency will conduct the fire risk evaluation.

OFFICE OF THE FIRE CHIEF

Response to Comment C9-148

According to the *King County Emergency Management Plan* (King County, 2003), King County does not maintain Hazardous Materials (HazMat) Response Teams and does not have personnel or equipment to respond to events that are immediately dangerous to life and health. The County, instead, depends on local fire department HazMat response teams. Accordingly, King County will consult with local fire departments as design progresses to ensure that staffing and equipment to respond to emergencies are available in areas where wastewater facilities would be located.

Response to Comment C9-149

Please refer to the response to Comment C9-137 in this letter.

Response to Comment C9-150

If the Unocal site were selected for Brightwater, the Edmonds Fire Department would have jurisdiction over the site.

Response to Comment C9-151

If the Unocal site were selected for Brightwater, the Edmonds Fire Department would be responsible for conducting the fire risk evaluation.

C9-152 • Describe emergency vehicle access to the site during construction, start-up and completion phases in response to fires, emergency medical service response, rescue and extrication incidents, hazardous materials release, and disaster.

C9-153 • Describe emergency vehicle access around/through the site to get to other locations – Town of Woodway, cliff and beach area, railroad right of way, streets and roads, and water side – during construction, start-up and completion phases for fires, emergency medical services response, rescue and extrication incidents, hazardous materials release, and disaster.

C9-154 • Describe detection systems, alarm systems, suppression systems, automatic-extinguishing systems, ventilation monitoring systems and signaling systems.

C9-155 • Describe the highest structures contemplated and the emergency access for high-angle rescue and extrication incidents.

C9-156 • Identify who is responsible for confined space rescue at the site during construction, start-up and completion phases.

C9-157 • Describe below grade structures and the emergency access to confined space and below grade rescue and extrication incidents.

C9-158 • Describe the types, quantities, transportation modes, conveyances, storage types and use of hazardous materials at the site.

C9-159 • Describe the evacuation plan for the residential, commercial, and recreational populations in the immediate area of the site in case of an on site hazardous materials release. Include consideration of surface road capacity, emergency response agencies utilizing the same access points as populations being evacuated, hillside slope and drainage, wind and water currents.

C9-160 • If there will be an on site industrial fire brigade, describe the level of staffing, training and certification and the type of emergency apparatus, tools and equipment.

C9-161 • Describe the disaster response agency for the site.

Response to Comment C9-152

Please refer to the response to the Snohomish County Fire District No. 7, Comment S1-2.

Response to Comment C9-153

Please refer to the response to the Snohomish County Fire District No. 7, Comment S1-2.

Response to Comment C9-154

The specific fire detection and prevention systems would be developed during final design in accordance with applicable codes and local fire regulations.

Response to Comment C9-155

Please refer to the response to Comment C9-121 in this letter.

Response to Comment C9-156

Please refer to the response to Comment C9-122 in this letter.

Response to Comment C9-157

Please refer to the response to Comment C9-123 in this letter.

Response to Comment C9-158

Appendix 3-A, Project Description: Treatment Plant, of the Final EIS contains a list of chemicals that are proposed for use at the treatment plant sites. This list includes sodium hydroxide, sulfuric acid, sodium hypochlorite, ferric chloride, and sodium bisulfite. This section also contains descriptions of the types of trucks that would carry chemicals to each site, storage systems, and estimated chemical quantities.

Response to Comment C9-159

Please refer to the response to Comment C9-126 in this letter.

Response to Comment C9-160

Please refer to the response to Comment C9-148 in this letter.

Response to Comment C9-161

Please refer to the response to Comment C9-126 in this letter.

C3
CITY OF KENMORE

FINAL
ENVIRONMENTAL
IMPACT STATEMENT

Brightwater
Regional Wastewater
Treatment System

COMMENTS AND RESPONSES

ECG
ENGINEERING CONSULTANT GROUP

January 21, 2003

Don Theiler, Manager and SEPA Responsible Official
Environmental Planning
King County Wastewater Treatment Division
King Street Center: KSC-NR-0505
201 South Jackson Street
Seattle, WA 98104-9972

RECEIVED
JAN 21 2003
ENVIRONMENTAL
PLANNING DIVISION

Dear Mr. Theiler:

On behalf of the City of Kenmore ECG, Inc. hereby submits the following comments on the Brightwater Regional Wastewater Treatment System Draft Environmental Impact Statement. Our comments begin with some general observations on the project and DEIS specific to Kenmore, which includes an *overview of specific concerns* and *mitigation measures apparent at this time*. Following these general comments, more specific comments by our subconsultants are provided on each chapter of the DEIS. The cities of Kenmore and Lake Forest Park jointly contracted with the Consultant to maximize resources available. The specific comments attached include reviews of both cities. C3-1

Our comments are focused on the conveyance system of the DEIS, since it is proposed to extend through our community and the impacts of the proposed system will significantly affect residential and commercial areas of our City. The City of Kenmore requests that all the comments contained herein be addressed in the Final Environmental Impact Statement (FEIS) for this project. C3-2

The DEIS is general in nature with no detail as to how the plant or other facilities will be designed or function. Consequently, it is difficult to provide our comments on in regard to specific impacts. There are three options for addressing this overall concern with lack of specifics in the DEIS. C3-3

1. Address specific items in the Final EIS, or
2. The County could commit to a phased environmental review, or
3. The City and the County could enter into an Interlocal Agreement to provide a means to the City to review the impacts of specific project components and require mitigation for potential impacts.

The City recommends that an Interlocal Agreement between the City and County be entered into that clearly specifies how and when specifics of the project will be reviewed, and the requirement for mitigation of impacts.

Following is an overview of specific concerns that need further addressing in the FEIS, followed by some of the mitigation measures apparent at this time that should be addressed. Detailed comments to DEIS are attached separately and addressing each section reviewed.

ECG, Inc. • 17632 140th Avenue NE • Woodinville, WA 98072 • 425.482.0876 • Fax 425.483.8953

Response to Comment C3-1

King County noted that the Cities of Lake Forest Park and Kenmore submitted separate comment letters with the same attachment, a report prepared for both cities by ECG, Inc. King County has responded, individually, to each comment in the cover letters from each city, the consultant's report through Attachment A, and the January 11, 2003, memorandum regarding Brightwater Draft EIS Transportation Section Comments. We have not responded individually to comments in Attachment B, City of Lake Forest Park Comprehensive Plan, Revised Draft dated November 21, 2002, City of Kenmore Comprehensive Plan dated March 2001, or to comments in the January 16, 2003 (revised), report, "Economic and Fiscal Impacts of the Proposed Brightwater Wastewater Treatment System on the Cities of Kenmore and Lake Forest Park." However, the Lake Forest Park and Kenmore Comprehensive Plans were considered in the land use analysis in Chapter 11 of the Final EIS. Economic and fiscal impacts are not part of an environmental analysis under SEPA; however, the report has been provided to the Brightwater project team for consideration.

Response to Comment C3-2

Comments will be responded to, as referred to in Comment C3-1 in this letter.

Response to Comment C3-3

Both the Draft EIS and the Final EIS include a discussion of the probable significant adverse environmental impacts and the reasonable mitigation measures for these identified impacts beyond that characterized in this comment. The Draft EIS was issued at a point in time when a certain level of information was known relating to the probable significant adverse impacts of the proposal and possible ways to reasonably mitigate those impacts. In areas where there was uncertainty in relation to impacts in one respect or another,

the Draft EIS presented, consistent with SEPA Guidelines, a worst-case analysis of impacts. The Draft EIS also indicated that ongoing analysis was under way and that additional information would be forthcoming in the Final EIS and otherwise. The purpose of a Final EIS is to respond to comments on the Draft EIS and, where appropriate, to provide additional or revised information and analysis relating to probable significant impacts of the proposal and reasonable mitigation measures. Since issuance of the Draft EIS in late 2002, considerable additional analysis has been conducted, as is the case on any large project, to further define and develop the proposal and to respond to Draft EIS comments. A number of the details requested by the commentor relate to either information that does not involve probable significant adverse environmental impacts or information that is important prior to issuance of actual permits but may not be essential to include in an EIS. Additional analysis that has been conducted that relates to probable significant adverse impacts that will not be mitigated or regulated into non-significance is included as part of the Final EIS analysis. This includes additional analysis regarding potential impacts to water resources in Chapter 6 of the Final EIS.

OVERVIEW OF SPECIFIC CONCERNS THAT NEED FURTHER ADDRESSING:

C3-4 1. The Preferred Alternative, Route 9-195th Street System, has the most impacts on the City of Kenmore of the three alternatives studied in the DEIS. There is no quantitative basis or explanation as to why this is a better route than the Route 9-228th Street System Alternative. More detail is needed in comparison of the two routes and the process in determining the preferred route.

C3-5 2. More thorough evaluation is needed evaluating details and impacts to providing a Micro-tunnel verses a Deep Tunnel for the influent line between Portals 10 and 11 specifically as it impacts Kenmore. One large portal is required for the Deep Tunnel where as Micro-tunnels would require four smaller pits along the length. Impact comparisons are needed to properties, businesses, traffic, streams, wetlands, utilities, etc.

C3-6 3. Portal locations 11 and 34 include a large portion of retail and business center in Kenmore. Location of the portal should be sited to limit impacts on businesses. The City of Kenmore should be actively involved in the decision-making process that ultimately approves the final locations of all portals. Every effort should be made to preserve and protect the economic vitality of the business community.

C3-7 4. The **Earth and Groundwater** Section of the DEIS lacks project design specifics. More geologic mapping is needed. Impacts of dewatering for trenches, tunnels, and portals have not been adequately addressed. Other issues regarding tunneling impacts addressed in the specific comments attached need to be further addressed.

C3-8 C3-9 C3-10 5. The **Surface Water** Section of the DEIS lacks project design specifics. The impacts of erosion and sedimentation have not been quantified. It does not address what surface water monitoring will be performed. There has been no analysis as to the impact on the City's storm water system, the adequacy of the storm drainage system, and the methods of dewatering and disposal. We recommend a baseline geomorphic survey of potentially affected streams prior to construction and regular monitoring during and after construction. Potential mitigation activities should be identified.

C3-11 6. The **Plants, Animals and Wetlands** Section of the DEIS is poorly defined at the present time such that it is difficult to assess the actual potential impacts and the adequacy of potential mitigation measures.

C3-12 C3-13 C3-14 C3-15 7. The **Land And Shoreline Use, Aesthetics, Light and Glare, Recreation and Cultural Resources** Sections of the DEIS neglects to summarize the Comprehensive Plan for Kenmore and therefore may be in conflict. There are impacts which need further addressing, consideration should be given for community goals and desires prior to final siting of Portals or facilities. Determination of location of essential public facilities should comply with the City of Kenmore's Comprehensive Plan, Siting of Essential Public Facilities Guidelines. Impacts to the neighborhood character will need to be assessed as it relates to the air quality, dust, noise level, vibrations, and aesthetics.

C3-16 8. The Transportation Section of the DEIS does not address specific impacts to the Portal locations. When the actual locations and truck routes are identified additional analysis should be conducted to identify impacts to streets. Improvements may be required to accommodate truck access for construction. Pedestrian improvements, overlays and/or street construction will very likely be required to local streets where there are truck traffic and vehicle impacts. Impacts to the neighborhood character will need to be assessed as it relates to the truck routes, the number of trucks, hours of work the trucks and portals are

Response to Comment C3-4

Please refer to the revised project description in Chapter 3 of the Final EIS for a more detailed comparison of alternatives.

Response to Comment C3-5

Due to additional flow management analysis, the reach from Portals 10 to 11 would no longer be required for the Route 9 System. This reach is still part of the Unocal System; however, Portal 10 is a secondary portal only. The change is described in Chapter 3 of the Final EIS.

Response to Comment C3-6

King County will continue to work with the City of Kenmore and other jurisdictions to preserve the economic vitality of the community. Portal 34 has been dropped from further consideration because the Route 9 alignment has been revised since issuance of the Draft EIS.

Response to Comment C3-7

Additional detail has been added to Appendices 3-B, Project Description: Conveyance, and 6-B, Geology and Groundwater, of the Final EIS concerning project design and additional analyses of "impacts of dewatering for trenches, tunnels, and portals...." Although additional geologic mapping has not been completed for the EIS, a field reconnaissance-level survey of geologic hazards at portal locations has been completed and is included in Chapter 4 of the Final EIS. Existing surficial geologic information available through the Seattle Geologic Mapping Project (SGMP) is the most current source of geologic mapping in the project area, and is considered to be suitable for EIS purposes. Additional site-specific geologic explorations will be an important element of future design studies for conveyance portals and the chosen plant site.

Response to Comment C3-8

The erosion and sedimentation impacts evaluation that has been conducted is appropriate to determine the potential level of significance, as required by SEPA. It is expected that significant releases of sediments would not occur because the project construction would be guided by erosion and sedimentation controls set forth in the Washington State Department of Ecology's (Ecology) *Stormwater Management Manual for western Washington* (August, 2001) as well as local requirements. An erosion and sediment control plan would also be completed as part of the conveyance facility Individual NPDES Construction Stormwater Permit SWPPP and would be approved by Ecology. Monitoring would be conducted during construction as a condition of the NPDES permit to verify effectiveness of BMPs and to quantify erosion and sedimentation impacts.

Response to Comment C3-9

Surface water monitoring would be outlined in the Stormwater Pollution Prevention Plan (SWPPP), developed as a requirement of the conveyance facility Individual NPDES Construction Stormwater Permit, and approved by Ecology. Please refer to the response to the City of Bothell, Comment C2-9. Where a discharge to the local storm conveyance system is proposed, capacity of the system would be determined prior to construction of the Brightwater project to determine if alternative disposal methods are necessary. In order for discharge to an existing stormwater system to occur, use of existing stormwater conveyance facilities must not impair the functioning of the system and the discharge must not exceed system capacity. A detailed study would be conducted if any discharge is anticipated to exceed 10 percent of the receiving water discharge rate. (Please refer to response to the Washington State Department of Ecology, Comment W5-4.) Should unforeseen impacts to the receiving stormwater system occur, King County would work with the local jurisdiction to mitigate any impacts related to the Brightwater project. Please refer to Appendix 6-F, Groundwater and Stormwater Management at the Candidate Portal Sites, of the Final EIS for dewatering discharge disposal methods and estimated capacities of local storm conveyance systems. Construction dewatering methods are described in Chapter 6 and in Appendix 6-B, Geology and Groundwater, of the Final EIS.

Response to Comment C3-10

Chapter 6 of the Final EIS contains substantially more detailed information on streamflow in streams potentially affected by construction and operation of the treatment plant and conveyance system. The chapter also provides additional information on stream geomorphology for potentially affected streams when the information could be found in existing sources. The Final EIS also includes the results of a geomorphic survey for Little Bear Creek; however, other streams along the conveyance route and in the vicinity of the treatment plant sites would be more appropriately surveyed in the future if warranted by potential impacts.

As noted in Chapter 6 and Appendix 6-F, Groundwater and Stormwater Management at the Candidate Portal Sites, of the Final EIS, dewatering activities during construction and stormwater management both during and after construction would be guided by all applicable Ecology requirements, including Ecology's Stormwater Management Manual for Western Washington (August, 2001). For dewatering in particular, these regulations were developed to minimize impacts to stream geomorphology, beneficial uses, and aquatic biota. For example, Ecology recommends that dewatering discharge to streams not exceed 10 percent of streamflow at any time. As discussed in Chapter 6 of the Final EIS, King County would use a variety of strategies to minimize stream impacts during dewatering activities, including onsite detention, re-injection to groundwater, and/or discharge to local sewer systems. Any proposal to exceed standards would require a detailed hydrologic impact study to evaluate potential impacts to stream channel morphology, among other factors. King County is committed to working with Ecology to determine when geomorphic surveys of potentially affected streams would be appropriate.

Response to Comment C3-11

New information has been added to Chapter 7 of the Final EIS to provide more information with which to assess impacts and mitigation measures. In particular, the Final EIS identifies specific candidate portal

sites, plant site layouts, and outfall corridors and construction methods. Based on this new information, substantial new impact evaluations and mitigation measures have been provided.

Response to Comment C3-12

The Regulatory Environment section and the impact analyses in Chapters 11 and Appendix 11-A, Land Use Plans and Policies: Brightwater Regional Wastewater Treatment System, of the Final EIS have been revised to include a discussion of relevant city comprehensive plan policies and development regulations related to the siting of essential public facilities such as Brightwater.

Response to Comment C3-13

Impacts to communities were given substantial weight in the portal identification and screening process. Screening criteria included evaluation of traffic, odor, proximity of structures, and other environmental and engineering considerations. Please refer to Appendix 2-B, Portal Screening Level 1 and 2 Documentation, of the Final EIS for a summary of this process.

Response to Comment C3-14

An EIS requires discussion of the project's relationship to land use plans and policies. This discussion can be found in Chapter 11 under the Regulatory Environment and Impacts sections in the Draft EIS and has been updated in the Regulatory Environment, Impacts and Mitigation sections, and Appendix 11-A, Land Use Plans and Policies: Brightwater Regional Wastewater Treatment System, of the Final EIS. The discussion identifies the proposal's consistencies as well as inconsistencies with existing plans and policies, meeting one of the purposes of SEPA: disclosure. SEPA does not, however, require that a proponent demonstrate in an EIS consistency with land use plans and policies. This EIS does identify those instances in which rezones or other legislative changes may be required to allow the Brightwater Treatment Plant to become consistent with existing plans and policies. The Brightwater EIS also identifies the principal permits and approvals that are required for the various Brightwater facilities. Information relating to permit or approval criteria is also provided. SEPA does not require that an EIS demonstrate that each condition or criteria of permits and regulatory approvals for a proposed project be identified. The appropriate time and place for evaluating the extent to which a project satisfies any specific permit or approval criteria is in the local, state, and federal permit and approval processes. For the Brightwater project this process will be initiated following issuance of the Final EIS and selection of a specific Brightwater System alternative. It is at this time the final details of the system facilities will be more clearly defined, and permit processing will begin.

Response to Comment C3-15

Since issuance of the Draft EIS, additional portal siting area refinements have occurred allowing for a more detailed analysis of construction impacts related to the topics of interest; air quality, dust, noise level, vibrations, and aesthetics. Please refer Chapters 5, 10, and 12 of the Final EIS for updated information. More specific information can be found in Appendices 5-B, Odor Analysis: Conveyance, and 10-B, Noise and Vibration: Conveyance, of the Final EIS. King County will be working with the local cities and neighborhoods in the permitting and design processes to ensure compliance with code requirements and aesthetic desires.

Response to Comment C3-16

Additional detailed analyses of construction traffic related to specific portal locations have been included in Chapter 16 of the Final EIS. Construction traffic routes and traffic impacts have been identified. Please refer to Appendix 16-B, Transportation Impacts: Plant Sites and Conveyance, of the Final EIS for greater detail.

A more detailed local traffic management plan (TMP) addressing very specific mitigation measures would be prepared for all jurisdictions affected by construction and is included as a mitigation measure in the Final EIS. This plan would include time of day restrictions, necessary improvements to the roadway network, types of closures, pedestrian and bicycle detours, traffic routing/circulation management, and traffic control measures for safety on the affected roadways. These measures would be coordinated with affected jurisdictions and finalized by King County during permitting. In addition, the TMP would include a plan for monitoring and restoration of streets to pre-existing conditions,

access for emergency services, and safe access for pedestrians and bicyclists, and would direct the movement of employees, equipment, and materials to reduce impacts along project traffic corridors. Final plan approval would be coordinated with the affected local jurisdictions, including the City of Kenmore. All roadways and non-motorized facilities impacted by the development of the Brightwater project would be restored to pre-existing or better conditions. King County would work with each local jurisdiction to determine the method that would be used to inventory street conditions prior to construction and the level of improvements for restoration during the permitting process.

C3-16 operating, neighborhood safety, and traffic calming measures. Routes of trucks, times of operation and duration need to be reviewed and approved by the City. Compensation will need to be provided to the City to reimburse for monitoring and inspections.

MITIGATION MEASURES APPARENT AT THIS TIME:

C3-17 1. The County should provide full and complete mitigation to the City for any adverse impacts associated with the conveyance system improvements. A mitigation fund should be provided to the City to be used for improvements and mitigation.

C3-18 2. The County should mitigate impacts to the streets within Kenmore before, during and after construction. Truck routes and traffic circulation needs to be studied. Anticipated mitigation would include street overlays or reconstruction, sight distance improvements, curb radii improvements, pedestrian safety improvements, traffic calming, street lighting, signage, undergrounding of utilities when appropriate, and signal improvements. Truck routes should be excluded from 73rd Avenue NE and 68th Avenue NE, north of SR522.

C3-19 3. Details of the project need further addressing in the FEIS and mitigation provided to insure the protection of groundwater, streams, and wetlands. Details of the mitigation would be determined when specifics are more clearly identified. Improvements to the City's storm drainage system may be necessary. Other mitigation elements may require the enhancements of stream corridors and stream basins.

C3-20 4. Bonding or another means will be necessary to mitigate any unforeseen impacts which may arise during or after construction.

C3-21 5. When specific portal, tunnel and trench locations are identified, an analysis must be performed to address and mitigate possible economic impacts to businesses.

C3-22 6. If any portal sites are turned over to the City for public use following construction, mitigation should be provided for design, restoration and enhancement of the site for public use. Portals in residential areas should be turned over to the City to be used as neighborhood parks. Consideration should be given to placing Portal 45, if installed, in Linwood Park. In the vicinity of Portals, mitigation would include completion of surface water projects identified in the Surface Water Master Plan and the Swamp Creek Flood Reduction Plan.

C3-23

C3-24 7. An emergency response plan should be developed for deep tunnel access that would include training and equipping local public safety agencies.

C3-25 8. Baseline studies should be performed for streams, wetlands, and water bodies to assess impacts and mitigation during and after construction. Impacts to trees should be addressed for tunnels, portals, and open trenches and an inventory may be required.

C3-26 9. Funds should be provided to the City equivalent to 1% of the construction cost for work within the City to be used for the 1% For Art Program.

C3-27 10. Mitigation will include cost reimbursement to the City for monitoring construction impacts.

C3-28 11. The County should coordinate and work with the City's design consultants and other construction projects throughout the City, on schedules and City capital improvements to mitigate adverse impacts.

C3-29 12. A pedestrian trail should be located along the Tolt Pipeline in areas to mitigate pedestrian access and safety caused by construction.

Response to Comment C3-17

Please see the response to the City of Shoreline, Comment C6-5, regarding mitigation suggestions, plans, policies and procedures.

Response to Comment C3-18

Please refer to the response to Comment C3-16 in this letter. Construction truck access routes through the City of Kenmore would be identified and approved through the local permitting process. No truck traffic would travel on 73rd Avenue NE north of SR-522. However, Portal 11 does include a portal siting candidate on 68th Avenue NE north of SR-522 at NE 181st Street. Please refer to Appendix 16-B, Transportation Impacts: Plant Sites and Conveyance, of the Final EIS for greater detail.

Response to Comment C3-19

Please refer to the response to the Washington State Department of Ecology and the City of Bothell, Comments W5-8 and C2-9 respectively, for description of mitigation for protection of groundwater, streams, and wetlands. Please refer to the response to Comment C3-9 in this letter, for a description of the utilization of a local storm conveyance system.

Response to Comment C3-20

Please refer to the response to the City of Shoreline, Comment C6-5, regarding mitigation suggestions, plans, policies and procedures.

Response to Comment C3-21

After a final decision is made on the location for the Brightwater System, King County would work directly with affected jurisdictions and permitting agencies on mitigation strategies and solutions to Brightwater construction and operational impacts. However, increases or decreases in business revenues, tax revenues, and property values are not

environmental impacts as defined by SEPA (WAC 197-11) and were not addressed in the EIS.

Response to Comment C3-22

Mitigation improvements will be coordinated during the Design Workshops that will be conducted in close cooperation with key stakeholders during the final design process.

King County would coordinate with local jurisdictions to determine the future use of the portal sites at the completion of construction activities. As described in the Final EIS, a portion of some portal sites would be unavailable to public use due to the placement of a utility structure. Depending on the location of portal sites, mitigation options could include park or recreation facilities and other redevelopment opportunities. Linwood Park was not selected as a potential portal site during the Level 2 Screening Evaluation. Other sites were more consistent with screening criteria.

Response to Comment C3-23

King County would consider projects outlined in the Surface Water Master Plan and the Swamp Creek Flood Reduction Plan for satisfying required mitigation for Brightwater project impacts, if appropriate.

Response to Comment C3-24

An Emergency Response Plan addressing construction and operation safety issues and response procedures to emergency situations would be prepared prior to the onset of the construction phase. King County would coordinate with local fire and emergency service providers to ensure they have the necessary training and equipment to assist in any emergency response related to the Brightwater System. In addition, construction contractors would provide safety personnel at construction sites in accordance with the Occupational Safety and Health Administration requirements. Safety personnel would be trained to respond to construction-related emergencies. In the event of an emergency at a Brightwater construction site, the contractor would be the first responder and local fire/emergency service providers would be contacted for backup support as needed.

A Spill Prevention Plan that outlines specific procedures construction workers and emergency service providers would follow in the event of an accidental hazardous materials spill would be prepared in accordance with Washington State Department of Ecology standards.

Response to Comment C3-25

The Final EIS characterizes vegetation, wetlands, and streams on each of the candidate portal sites at a level appropriate to compare alternatives for the purposes of SEPA. Also, impacts to critical areas, including mature forest, were estimated for each portal site. Please refer to Chapter 7 of the Final EIS.

After publication of the Final EIS, various detailed baseline studies would be conducted for streams, wetlands, and water bodies as part of meeting specific permitting requirements for construction of the Brightwater conveyance system. In accordance with Section 7 of the Endangered Species Act (ESA), a Biological Assessment would be prepared for the project, which would present baseline studies for habitat that supports fish and wildlife species listed under the ESA as threatened, endangered, proposed, or candidate. In accordance with local, state, and federal regulations, wetland delineation reports and stream special studies would also be prepared where necessary to meet permitting requirements for each Brightwater construction site proposed in or near a wetland, stream, or other water body. In accordance with local regulations, inventories of significant trees would be conducted where required for each construction site, and tree retention plans would be developed. King County will work with local jurisdictions to take results of the baseline studies and develop appropriate mitigation plans for aquatic resource and tree impacts.

Response to Comment C3-26

The 1 percent for art program is not a SEPA-related issue and therefore is not addressed in the Final EIS. The King County Cultural Development Authority's public art program, formerly the King County public art program, manages the 1 percent for art fund for King County. Please see King County Code Chapter 4.40 for more information on King County's public art fund. Please refer to the response to the City of Shoreline, Comment C6-5, regarding mitigation suggestions, plans, policies and procedures.

Response to Comment C3-27

Please refer to response to the City of Shoreline, Comment C6-5, regarding mitigation suggestions, plans, policies and procedures.

Response to Comment C3-28

Please refer to response to the City of Shoreline, Comment C6-5, regarding mitigation suggestions, plans, policies and procedures.

Response to Comment C3-29

A traffic management plan (TMP) would be prepared for all affected jurisdictions. The TMP would include specific mitigation measures that would reduce traffic impacts that are a direct result of the Brightwater Treatment Plant project only along construction access routes. These mitigation measures do not include a pedestrian trail along the Tolt Pipeline.

C3-30
C3-31

13. The City highly recommends the siting of Portal 34 in Swamp Creek Park rather than disrupting business and traffic. As part of that siting and mitigation we would encourage the County locate trailhead parking and public amenities near the Burk-Gilman Trail adjacent to the park site, and complete appropriate park improvements. The County should pursue opening up the south leg of 80th Avenue NE and SR522 for construction access only. Mitigation may necessitate the replacement of the NE 175th Street Swamp Creek Bridge.

C3-32
C3-33

14. The County should coordinate the location of Portal 11 with local businesses and the LakePointe Development to minimize the adverse impacts. Work should be coordinated with the City to insure consistency with City plans for transportation and transit improvements in the area. If Portal 11 is located near the Burke-Gilman Trail we encourage the County to locate trailhead parking and public amenities near the Burk-Gilman Trail and complete appropriate park improvements.

C3-34

15. Portal 11 location will take up available land for the potential siting of critical City facilities and could have significant impacts on our major Down Town Master Plan. Conflict with GMA may hinder our ability to meet countywide policy growth targets. One of many considerations in the location should be given to co-locating the portal site with city facilities in order to not hinder the use of limited downtown properties.

C3-35

16. Any open trenching shall be minimized and the County should work with the City. Connection design of existing lines to Portals will require coordination and approval by the City. Complete restoration and mitigation is needed of streets and facilities recently installed by the City or currently being designed.

SPECIFIC COMMENTS TO THE DEIS:

Attached are the detailed comments prepared by GeoEngineers, The Transpo Group, and Huckell/Weinman Associates. GeoEngineers and The Transpo Group each addresses specific areas of the DEIS and Huckell/Weinman Associates addresses the economic and fiscal impacts on the City.

Thank you for the opportunity to comment on the Brightwater DEIS. If you have any questions regarding these comments, please contact Chuck Price at 425-482-0876.

Sincerely,

ECG, Inc.

Charles E. Price, P.E.
Principal

Encl: Consultant DEIS Specific Comments

cc: Steve Anderson, City Manager

Response to Comment C3-30

King County will consider this suggestion, along with other engineering, environmental, community, and financial factors as portal screening proceeds. King County will make every attempt to avoid impacts to business and traffic, and will participate in appropriate mitigation for impacts directly related to the Brightwater project.

Response to Comment C3-31

Portal 34 has been dropped from further consideration because the Route 9 alignment has been revised since issuance of the Draft EIS.

Response to Comment C3-32

King County will coordinate with the City of Kenmore as the portal screening process progresses. King County will coordinate with the City and will incorporate City transportation and transit plans in to the portal screening process.

Response to Comment C3-33

King County will coordinate with all local community and permitting jurisdictions represented along the Brightwater System to develop feasible and appropriate mitigation measures. Such measures could include adding trailhead parking and public amenities near the Burke-Gilman Trail as suggested by the City of Kenmore.

Response to Comment C3-34

King County will consider this and other factors as final portal siting progresses. King County will continue to coordinate with the City of Kenmore as final portal locations are evaluated to minimize impacts to the City to the greatest extent possible.

Response to Comment C3-35

King County will work with local communities and agencies during the design, construction coordination, permitting, and mitigation of the construction projects to minimize impacts, including those generated from the construction of the connections between the existing King County conveyance system and the new Brightwater influent tunnel.

GeoEngineers

January 20, 2003

ECG, Inc.
17632 140th Avenue NE
Woodinville, Washington 98072

Attention: Chuck Price, P.E.

Consultation Services
Review of Draft Environmental Impact Statement, Brightwater Regional Wastewater Treatment System for City of Kenmore and City of Lake Forest Park
File No. 0146-093-01

INTRODUCTION

We are pleased to present this letter summarizing the results of our review of pertinent sections of the Draft Environmental Impact Statement (DEIS) for the Brightwater Regional Wastewater Treatment Systems, dated November 2002. Our services were requested by Mr. Chuck Price, P.E., of ECG, Inc. during a telephone conversation with Craig Erdman and Galan McInelly of GeoEngineers, Inc. on November 7, 2002. Mr. Price requested that we review portions of the DEIS on behalf of the City of Kenmore (Kenmore) and the City of Lake Forest Park (Lake Forest Park).

C3-36 The proposed Brightwater Regional Wastewater Treatment System will consist of a new treatment plant, influent and effluent conveyance corridors and a marine outfall. The reasons for the new treatment plant are presented in the DEIS. Four principal alternatives were developed for analysis in the DEIS, including the no action alternative. Two of the alternatives utilize the same wastewater treatment plant (WWTP) site (Rout 9 site, located northeast of Woodinville) and the same influent corridor, but would utilize separate effluent corridors to a marine outfall. The two effluent corridors are referred to as the 195th Corridor and 228th Corridor. The effluent conveyance corridors for the Route 9 site and the influent corridor for the Unocal site include options for a gravity lines or a combination of force main-gravity lines. The fourth alternative would utilize a separate WWTP site, referred to as the Unocal site, located in Edmonds, Washington. In addition, the influent corridor would utilize portions of the influent corridor considered for the Route 9 treatment plant site. A comparatively shorter effluent corridor would be required from the Unocal site to its designated marine outfall. The King County Executive selected the Route 9 WWTP site using the 195th corridor as the Preferred Alternative.

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Response to Comment C3-36

Thank you for your comment.

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SCOPE OF WORK

The purpose of our services was to review selected portions of the DEIS on behalf of the City of Kenmore and the City of Lake Forest Park. The following is our scope of services:

1. Review selected sections of the DEIS,
2. Develop comments and questions based on our review, primarily focusing on aspects that potentially affect the Cities of Kenmore and Lake Forest Park,
3. Prepare a draft summary of our review,
4. Comment on adequacy of the DEIS with respect to the SEPA process,
5. Provide an opinion, based on our review, if there is a preferred alternative as it potentially affects Kenmore and/or Lake Forest Park.

As part of our services we reviewed the following sections:

Earth and Groundwater
Surface Water
Plants, Animals and Wetlands
Environmental Health
Land and Shoreline Use
Aesthetics
Light and Glare
Recreation
Cultural Resources

ELEMENT REVIEW

We reviewed the sections of the DEIS as listed above and developed comments and questions. Our specific comments and questions are presented in Attachment A. The following is a summary of some of our specific and/or most relevant comments or questions on a section by section basis to highlight key issues or for explanatory purposes.

EARTH AND GROUNDWATER

The Earth and Groundwater section characterizes the existing conditions adequately overall. However, we found some inconsistencies or lack of information. In addition, it is our opinion that some of the challenges, impacts and mitigation measures are not adequately developed.

C3-37 There is notably some discrepancy with respect to distances to faults (e.g. the South Whidbey Island fault and/or South Whidbey Island Fault Zone). This may be because different authors prepared different sections and referenced literature showing varying fault locations. If there are uncertainties, these should be so stated, but in all cases should be consistent. In addition, it may

C3-38 be useful to provide ranges of distances to the conveyance corridors.

C3-39 Some of the borings have been projected onto subsurface profiles from great distances (200 feet to over 3000 feet). While this may be acceptable in some situations, projecting borings even relatively short distances (e.g. 200 feet) may give a false impression about subsurface

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Response to Comment C3-37

Additional clarification concerning the South Whidbey Island Fault zone is provided in Chapter 4 of the Final EIS, and more detail on geologic conditions is provided in Appendix 6-B, Geology and Groundwater, of the Final EIS.

The King County Brightwater team is working closely with researchers at the U.S.Geological Survey and the University of Washington to evaluate the seismic risk posed by the South Whidbey Island Fault. The fault is thought to be comprised of numerous “splays,” or fault surfaces, and the locations are not well defined. The Final EIS text has been revised; please refer to Chapter 4. This is an area of current and ongoing research, and King County will continue to obtain updated information about this regional seismic structure throughout predesign phase of this project.

Response to Comment C3-38

Figure 4-3 in the Draft EIS showed the mapped and extrapolated locations for the South Whidbey Island Fault. Chapter 4 of the Final EIS has been revised to incorporate new information and to review and revise technical information, such as fault distances, where appropriate.

Response to Comment C3-39

King County recognized that the project soil boring information in the Draft EIS lacked specificity and that information on the Route 9-195th Street corridor was limited. Therefore, a number of new regional and area-specific subsurface cross sections have been developed, which pass directly through boring locations, and data from a large number of new borings along the Route 9-195th Street corridor have been added to the cross sections. These new cross sections were included in Appendix 6-B, Geology and Groundwater, of the Final EIS.

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C3-39 conditions, no matter what caveats are placed on the figures. Also, a significant portion of the 195th Corridor lacks subsurface information. This makes it difficult to evaluate potential geologic materials and groundwater conditions relative to the proposed tunneling activities.

C3-40 A clear discussion about geologic hazards is not provided as they relate to each jurisdictions critical area ordinance (CAO). The text refers to low, medium and high landslide hazard, but the reader is not provided any definitions for low, medium and high hazards.

C3-41 While we understand that portal areas have not been selected, general areas have been identified. We recommend that mapping of geologic hazards should not be based solely on existing maps and should at least include reconnaissance-level information. This is particularly important since the earth element will have downgradient impacts on other elements (surface water, wetlands, aquatic habitat, etc.).

C3-42 The DEIS identifies significant aquifers, but fails to identify the wellhead protection zone for the well field serving Lake Forest Park, located to the north of the proposed influent corridors and south of the 195th and 228th Effluent Corridors. We also recommend that a cross section be developed (oriented north-south) to show the relationship of the proposed conveyance options to the well field. Finally, there is no quantitative basis for the opinion that dewatering upgradient of the well field will not have impacts.

C3-43 Many of the challenges that this project requires are not adequately addressed in the DEIS. This includes several portals over 300 feet in depth and at least one that may be as deep as 455 feet (outside of Kenmore and Lake Forest Park). There was no discussion about salvaging tunnel boring machines (TBM) in place as part of design (see Brightwater Project Conveyance System Deep Tunnel Alternatives Peer Review Workshop, dated September 14, 2001) or because a machine could not be rescued.

C3-44 Impacts of dewatering have not been adequately addressed, especially with respect to the maintenance of the tunnel boring machines required every 200 to 400 feet.

C3-45 We have also recommended that tunneling methods be used that allow for grouting ahead of the tunneling machine to reduce impacts from dewatering requirements for construction, potential settlement, and groundwater depletion from aquifer leakage.

SURFACE WATER

C3-46 Impacts and mitigation to surface waters don't appear to be addressed very well. What will monitoring consist of? The impacts of erosion and sedimentation have not been quantified. Dewatering will result in a significant amount of water potentially being routed to surface waters. We recommend a baseline geomorphic survey of potentially affected streams prior to construction and regular monitoring during and after construction. The baselines and monitoring should include upstream and downstream assessments. In addition, potential mitigation activities should be identified. The surface water element has significant bearing on aquatic resources and essential fish habitat.

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Response to Comment C3-40

Chapter 4 of the Final EIS now provides a discussion of how the various locally based critical area ordinances (CAOs) have been referenced in order to identify documented geologic hazards in the various Brightwater System Alternatives. Some local jurisdictions defer to either Snohomish or King County CAOs, while other local jurisdictions have promulgated and are using their own CAOs. For consistency and uniformity in evaluating the alternatives for this Final EIS, the Snohomish and King County CAO references have been the primary ones used. During the permitting phases of the Brightwater System, local-specific CAOs, if different than either King or Snohomish County's, will be used as applicable and appropriate. Also, Chapter 4 provides definitions for the low, medium, and high levels of landslide hazards designations.

Response to Comment C3-41

Reconnaissance-level surveys of geologic hazards at portal sites do provide useful information. These surveys have been completed and are described Chapter 4 of the Final EIS.

Response to Comment C3-42

Appendix 6-B, Geology and Groundwater, of the Final EIS includes figures showing the Lake Forest Park wellhead protection area and includes two new approximately north-south cross sections showing inferred subsurface conditions in the area. Appendix 6-B also provides a quantitative analysis of impacts to groundwater from the proposed conveyance system. Please refer to the response to the City of Lake Forest Park, Comment C4-8.

Response to Comment C3-43

Due to additional engineering analysis and design after the publication of the Draft EIS, the depth of the deepest portals of the Route 9 195th and 228th Street System Alternatives have been reduced to approximately 180 feet, while the depth

of the deepest portal on the Unocal System Alternative has been reduced to approximately 280 feet. The Final EIS contains the revised depths as well as the construction methods used to construct such portals. Additional information is provided in Appendices 3-B, Project Description: Conveyance, and 6-B, Geology and Groundwater, of the Final EIS. The tunnel boring machines (TBMs) would be salvaged at the end of construction and not abandoned.

Response to Comment C3-44

Groundwater control issues associated with tunneling operations and maintenance of the tunnel boring machine (TBM) has been discussed in detail in Appendix 6-B, Geology and Groundwater, of the Final EIS. Please refer to the response to the Washington State Department of Ecology, Comment W5-9, for a summary of the additional analyses completed by King County.

Response to Comment C3-45

Standard King County construction specifications require that the tunnel boring machines (TBM) be able to supply ground conditioners and/or grout to the front of the TBM to reduce potential dewatering impacts. There is no plan to omit this requirement for the construction of the Brightwater System.

Response to Comment C3-46

A geomorphic survey of Little Bear Creek channel in the vicinity of the project site has been conducted. The Brightwater project would result in slightly lower peak flows in Little Bear Creek and would not change the channel conditions in the creek. Please refer to the response to the City of Woodinville, Comment C5-71, and Appendices 6-E, Route 9 Site Runoff Effects on the Geomorphology of Little Bear Creek, and 6-J, Summer Season Temperature Effects of Stormwater Ponds on Receiving Streams, of the Final EIS regarding potential stream impacts. Updated stormwater detention and water quality treatment volumes for the Route 9 site can be found in the Chapter 6 and Appendix 6-D, Permanent Stormwater Management at the Treatment Plant Sites, of the Final EIS.

The water quality analysis in the Final EIS reviews a wide range of potential construction and operations impacts and water quality parameters and is sufficient to adequately characterize project impacts upon the surface waters. There has been no attempt to quantify potential stormwater erosion from any of the project locations. Such calculations tend to be very inaccurate and are not needed for the selection, design, and implementation of erosion control measures and related Best Management Practices (BMPs) from the Washington State Department of Ecology's *Stormwater Management Manual for Western Washington* (August 2001). Site-specific soil characteristics would be taken into account when the erosion and sediment control measures would be designed during the detailed design phase of this project. For instance, soil type and grain size distribution play a role in the design of sediment ponds and would be determined on a site-specific basis.

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PLANTS, ANIMALS AND WETLANDS

C3-47 This section of the DEIS includes discussion of the existing conditions and some of the potential impacts from portal shaft construction activities. However, the project is so poorly defined at the present time that it is difficult to assess the actual potential impacts and the adequacy of potential mitigation measures. Most outstanding issues relate primarily to issues to be addressed under our questions and comments on the chapters for Earth and Groundwater and for Surface Water. However, more guidance could be provided with respect to restrictions or timing of flows from dewatering activities and noise and lighting impacts. We recommend that baseline and monitoring of aquatic habitat be completed in conjunction with geomorphic baseline and monitoring.

C3-48

LAND AND SHORELINE USE, AESTHETICS, LIGHT AND GLARE, RECREATION AND CULTURAL RESOURCES

C3-49 A primary shortcoming of the DEIS is that it neglects to summarize the Comprehensive Plans for Kenmore and Lake Forest Park and therefore may be in conflict. In addition, the DEIS does not reference local codes with respect to light and glare, or other goals as stated in the Comprehensive Plans. Proposed portals include shoreline areas, commercial areas including shopping centers, parks and school properties. There is a range in size of potential aboveground structures or whether some facilities will be below ground. These may include odor control facilities that "might" be constructed at portals along the influent corridor. We recommend that these odor control facilities be included to evaluate the "worst-case" scenario. This would affect the impacts and mitigation in the chapters for Land and Shoreline Use, Aesthetics, Air, and Light and Glare.

C3-50

C3-51 Portal areas are likely to include impacts to view corridors, shoreline areas, impacts to sensitive lands and likely result in removal of trees that are valued in both communities. Park space and sensitive areas including streams and wetlands are located within a few of the potential portal siting areas. Consideration should be given for community goals and desires prior to final siting.

C3-52 In the chapter on Noise and Vibration, a typical diagram for construction at a portal shows noise dissipation from the portal area only. We have concerns that more of the site will be in use for construction, expanding the area affected by noise. This will have greater significance if construction extends into night hours. In addition, truck traffic noise and vibration will be a significant element, especially at night. The traffic-related noise and vibrations could have impacts on nearby residences as well as nearby wildlife habitat that should be elucidated rather than being passed off to the chapter on transportation.

C3-53 Cultural resource assessments have relied on King County records. Kenmore has not completed an inventory of structures, as compared with Bothell, where an inventory has already been completed. Therefore, the results of the inventory may be skewed and may not accurately reflect existing conditions.

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Response to Comment C3-47

Without knowing what specific "existing conditions information" is being referred to in this comment, it is difficult to respond with any specificity.

Both the Draft EIS and the Final EIS include a reasonably thorough discussion of the probable significant adverse environmental impacts and reasonable mitigation measures for those identified impacts. The Draft EIS was issued at a point in time when a certain level of information was known relating to the probable significant adverse impacts of the proposal and possible ways to reasonably mitigate those impacts. In areas where there was uncertainty in relation to impacts in one respect or another, the Draft EIS presented, following SEPA Guidelines, a worst-case analysis of impacts. The Draft EIS also indicated that ongoing analysis was under way and that additional information would be forthcoming in the Final EIS and otherwise. The purpose of a Final EIS is to respond to comments on the Draft EIS and, where appropriate, to provide additional or revised information and analysis relating to probable significant impacts of the proposal and reasonable mitigation measures. Since issuance of the Draft EIS in late 2002, considerable additional analysis has been conducted, as is the case on any large project, to further define and develop the proposal and to respond to Draft EIS comments. A number of the details requested in various comments in this letter relate to either information that does not involve probable significant adverse environmental impacts or information that is important prior to issuance of actual permits but may not be essential to include in an EIS. Additional analysis that has been conducted that relates to probable significant adverse impacts that will not be mitigated or regulated into non-significance is included as part of the Final EIS analysis.

Response to Comment C3-48

The Final EIS contains substantially more information on the location of candidate portal sites, and on the potential impacts of dewatering on plants, animals, and wetlands. Refer to the response to the Washington State Department of Fish and Wildlife, Comment W4-21. The Final EIS also more specifically discusses light and noise impacts on wildlife for candidate portal sites. Please refer to Chapter 3 of the Final EIS for more information on candidate portal sites and to Chapter 7 for more information about potential impacts in the vicinity of portal sites. The reader is also directed to Appendix 6-F, Groundwater and Stormwater Management at Candidate Portal Sites, of the Final EIS, which provides additional evaluations on dewatering requirements for primary portal sites. King County is committed to appropriate monitoring of wetlands and streams during dewatering to minimize impacts.

Response to Comment C3-49

Please refer to the response to Comment C3-12 in this letter.

Response to Comment C3-50

A discussion of odor control facilities has been added to Chapters 5, 11, 12, and 13 of the Final EIS. Odor control facilities are proposed at Portal Siting Areas (PSAs) 5, 11, and 41 for the Route 9-195th Street System, PSAs 11, 33, and 41 for the Route 9-228th Street System, and PSA 11 for the Unocal System. All three systems call for the reuse of the existing Kenmore and North Creek pump stations. Please refer to Chapter 3 of the Final EIS for project description details.

Response to Comment C3-51

During the design phase of the project, King County would work with property owners, local communities and host jurisdictions to develop detailed mitigation and design specific to the selected Brightwater System. The process for ongoing site and facility design and the community's role in this process is described more fully in Chapter 2 of the Final EIS. The process of community input is already underway, beginning with a series of Brightwater workshops held in 2002. A final design team has been selected and is currently developing preliminary design materials in concert with a series of Technical Seminars open to all community participants, held during the summer of 2003. Also, please refer to the response to the City of Shoreline, Comment C6-5.

Response to Comment C3-52

Construction noise is exempt from noise codes during weekday hours of 7 a.m. to 10 p.m., but would be mitigated by several practical means as outlined for each portal site in Appendix 10-B, Noise and Vibration: Conveyance, of the Final EIS. Construction activities outside of exempt hours would only occur if a permit or variance were issued by the appropriate jurisdiction; noise levels outside of normally exempt periods, if allowed, would conform to the noise level requirements specified in the permit or variance. Construction-related traffic noise and vibration would impact residences and other sensitive properties along the haul routes to and from construction sites. The Final EIS describes noise monitoring, reporting and mitigation, including restricting hours of operation of activities as needed to meet permissible noise levels.

Response to Comment C3-53

King County conducted a survey of historic buildings and structures in 1977 and 1978 that included Kenmore. In 1994, the Washington State Department of Transportation sponsored a study of transportation-related historic resources along Bothell Way in Kenmore. King County has also conducted a survey of portals within Kenmore for the Brightwater EIS and identified one building within Portal Siting Area 45 in the Draft EIS that may be eligible for listing in the National Register of Historic Places (NRHP), the Washington Heritage Register (WHR), and/or the King County Landmarks List (KCLL). However, this building is not on within any of the alternative portal sites within Portal Siting Area 45. King County also conducted additional inventory and evaluation of historic buildings in support of the Final EIS. A cluster of buildings, known as the Twin Creeks Riding Stable, was identified in Portal Siting Area 44, and recommended to be not eligible for listing in the NRHP, WHR, or KCLL by the King County Historic Preservation Program. Further discussion of the Twin Creeks Riding Stable is in Appendix 15-A, Cultural Resources: Historic Buildings and Structures, of the Final EIS.

ECG, Inc.
January 20, 2003
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SUMMARY

C3-54 In general, it is our opinion that the DEIS lacks some existing conditions information and specificity as to the details of the project and the proposal. As a result, the DEIS lacks specificity with respect to impacts and mitigation. Many of the mitigation actions are to be addressed by "monitoring" and "appropriate mitigation measures", but no further discussion is provided. Examples are provided above and in Attachment A. In reading the DEIS and supporting documents, we have the impression that some portal areas are not decided on. Will portals potentially be located outside the portal siting areas shown in the DEIS?

C3-55

C3-56 For the elements we reviewed, the majority of impacts within the city limits of Kenmore and Lake Forest Park will occur primarily at or in the vicinity of portal locations, but could potentially result in impacts to nearby waterways. Groundwater, however, could be impacted by tunneling, portal construction or from dewatering of aquifers by leakage into the conveyance facilities. Potential impacts to the Lake Forest Park Water District well field have not adequately been characterized. This is exemplified by the fact that the wellhead protection zone is not shown in the DEIS. Therefore, impacts and mitigation can't be adequately addressed.

C3-57 The DEIS fails to summarize Comprehensive Plans for either Kenmore or Lake Forest Park. Key elements and goals of the Kenmore and Lake Forest Park Comprehensive Plans should also be included in the project design and the Environmental Impact Statement.

C3-58 There is not a clear difference between the 228th and 195th Corridors, except that more impacts will occur in Kenmore and Lake Forest Park with the 195th Corridor option. The Unocal site offers the least amount of tunneling and the least amount of potential or likely impacts to the two cities. However, it also lacks the flexibility for overflow treatment and rerouting of flows that the Route 9 plant has.

C3-59 Although the deep tunnel gravity option reduces the potential for leakage into surrounding aquifers, the cost for construction are increased and offers a number of challenges. These challenges include deep and costly portal shafts, long tunnel bores at depths of over 300 feet and the difficulties associated with varying earth and water conditions. Whether the cost of pump stations required and the added maintenance and energy costs associated with pumping influent and/or effluent offsets the cost and maintenance of the deep gravity-flow tunnel is beyond our scope.

LIMITATIONS

This review has been prepared for use by City of Lake Forest Park and City of Kenmore and their consultant for evaluation of the Draft Environmental Impact Statement (DEIS) for Brightwater Regional Wastewater Treatment System, in King and Snohomish counties, Washington. This review is not intended for use by others, and the information contained herein is not applicable to other sites.

Our review of the DEIS has relied almost entirely on information provided in the DEIS and referenced technical appendices. It is possible that errors may exist in the information provided in

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Response to Comment C3-54

Please refer to the response to Comment C3-3 in this letter.

Response to Comment C3-55

Generally, portals would be located within the portal siting areas designated in the Draft EIS. In a few cases where local agencies or landowners requested the consideration of other sites, those sites were also evaluated in the portal site screening and selection process for the Final EIS. In other cases, some portion of parcels identified and evaluated as candidate portal sites in the Final EIS may extend slightly outside of a designated portal siting area.

Candidate portal sites will continue to be evaluated after the Final EIS is issued. A final portal location will be selected as conveyance design continues once an alternative system is chosen.

Response to Comment C3-56

Additional analyses have been undertaken on the effects of tunneling and portal construction on groundwater conditions in the greater Kenmore/Lake Forest Park areas. Appendix 6-B, Geology and Groundwater, of the Final EIS specifically addresses the Lake Forest Park area and illustrations in this document show the wellhead protection area. In addition, the number of primary portals has been reduced such that for the Route 9-195th Street corridor, only two portals (11 and 44), out of an original four portals, are located within the greater Kenmore/Lake Forest Park area. For the Unocal corridor, only one portal (11) out of an original four portals, is located in this area. Portal depths have also decreased with elimination of the deep tunnel option along the Route 9-195th Street corridor, and preliminary design criteria for portal construction now specify shoring and groundwater control methods that limit effects on groundwater near the portals. Potential groundwater effects associated with portals have, therefore, been greatly reduced from those described in the

Draft EIS. Chapters 4 and 6 of the Final EIS contain updated information.

Response to Comment C3-57

Please refer to the response to Comment C3-12 in this letter. Please refer to Chapter 11 and Appendix 11-A, Land Use Plans and Policies: Brightwater Regional Wastewater Treatment System, of the Final EIS for additional discussion of Kenmore's and Lake Forest Park's Comprehensive Land Use Plans.

Response to Comment C3-58

For an updated comparison of project alternatives, please refer to Chapter 3 of the Final EIS.

Response to Comment C3-59

Cost and economic impacts are not topics analyzed under SEPA and therefore are not addressed in the Brightwater EIS. "SEPA contemplates that the general welfare, social, economic and other requirements and essential considerations of state policy will be taken into account in weighing and balancing alternatives and in making final decisions. The EIS is not required to evaluate and document all of the possible effects and considerations of a decision or to contain the balancing judgments that must ultimately be made by the decision makers" (WAC 197-11-448(1)).

However, once a final decision is made on the location for the Brightwater System, King County will work directly with affected jurisdictions and permitting agencies on mitigation strategies and solutions to Brightwater construction and operational impacts. As part of the overall decision-making process, King County is revising the cost estimates (dated November 2002) for the Brightwater alternatives. The revised estimates will be updated at the end of 2003 and will be available on request by contacting the Brightwater project at brightwater@metrokc.gov, or 206-684-6799, or toll-free 1-888-707-8571.

these documents . Our review comments should not be construed as a guarantee of the accuracy or completeness of the documentation provided to us.

Within the limitations of scope, schedule and budget, our services have been executed in accordance with generally accepted geotechnical and engineering geology practices in this area at the time this report was prepared. No warranty or other conditions, express or implied should be understood.

We appreciate the opportunity to be of service to you. If you have any questions regarding our services, please contact either of us at (425) 861-6000.

Very truly yours,

GeoEngineers, Inc.

Craig F. Erdman, P.G.
Senior Geologist

Galan W. McInelly, P.G., C.E.G., C.HG.
Principal

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Attachments

ATTACHMENT A

CHAPTER 4 – EARTH AND GROUNDWATER

4.1 AFFECTED ENVIRONMENT

C3-60 4.1.1.3 ***Local Regulations***. Rating of landslide hazard areas oversimplified. What is the definition for low, medium and high landslide risk? Does not refer to King County, Lake Forest Park or Kenmore Critical Areas Ordinance definitions for erosion, steep slope and landslide hazards.

C3-61 4.1.2.1 ***Regional Geology***. Third paragraph, 6th line: Vashon Stade

C3-62 4.1.2.2 ***Regional Seismicity***. The South Whidbey Island Fault Zone as extrapolated on-land is closer than 2 miles to Route 9 site and the conveyance corridors Make sure descriptions of distances to faults agree in all sections subsequent (e.g., Route 9 site description states 6 miles to fault).

C3-63 4.1.4.3 ***Geologic Hazards***. Geologic hazards have not been field verified, even at a reconnaissance level, and are based on existing maps which cannot be relied on for fatal flaws. Please show geologic hazards for each portal based on County and/or local ordinance.

C3-64 4.1.4.4 ***Groundwater***. Fourth sentence of first paragraph: "The western portions of the conveyance corridors are…."

Figure 4-10: Does the size of arrows showing groundwater flow directions have any significance? Either explain significance or show all as same size.

4.3 IMPACTS AND MITIGATION

4.3.2 Conveyance Corridors

C3-65 Seismic hazards indicate potential for liquefaction near Lake Washington, Sammamish Slough and their tributaries. What about potential impacts to portal areas and shallow sections of tunnels or trenches relative to liquefaction and surface spreading?

C3-66 Consider grouting ahead of tunneling equipment as potential methods to help mitigate for settlement and groundwater depletion.

There may be difficulties coordinating ground surveys with tunneling operations, making it difficult to accurately intersect shields installed at portals. Consider grouting a 40- or 50-foot wide zone at portals instead of using a shield to provide greater latitude (in conjunction with grouting ahead of tunneling machines).

C3-67 Dewatering will be required to relieve pressure at the face of tunneling machines for servicing. Servicing is estimated to occur every 200 to 400 feet. What segments will likely

C3-68 require dewatering to accomplish the required servicing? Has this requirement been included in traffic analysis?

C3-69 Dewatering volumes for construction have been described as "low", but seems like dewatering during construction will be a significant element to adequately address. Further elaboration on specifics of dewatering are needed.

C3-70 Please elaborate on the monitoring for groundwater impacts and mitigation relative to aquifer dewatering.

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Response to Comment C3-60

A definition of low, medium, and high landslide risk has been included in Chapter 4 of the Final EIS. After a specific alignment has been selected by King County, more detailed investigations will be undertaken at each portal site for purposes of identifying unstable areas and for designing slope stabilization methods. At that time, specific critical area designations for specific agencies with jurisdiction will be reviewed. Chapter 4 of the Final EIS has been revised to incorporate new information and to review and revise technical information, such as fault distances, where appropriate.

Response to Comment C3-61

Thank you for your comment. The text in Chapter 4 of the Final EIS has been corrected.

Response to Comment C3-62

Chapter 4 of the Final EIS has been revised to incorporate new information and to review and revise technical information, such as fault distances, where appropriate.

Response to Comment C3-63

King County agrees that additional surveys at portal locations are advisable. Consequently, a field reconnaissance has been conducted at proposed portal locations for which access is available, as a basis for providing a survey-level assessment of geologic hazards. The results of this work are included in Chapter 4 of the Final EIS.

Response to Comment C3-64

The text of the Final EIS has been revised. The size of the arrows on Figure 4-10 in the Draft EIS does not have any particular significance; the arrows show the general direction of regional groundwater flow. New subsurface information obtained from ongoing Brightwater pre-design studies has allowed a new figure to be prepared illustrating, in more

detail, groundwater flow in the regional Vashon Advance Outwash aquifer (Qva aquifer). This figure is included in Appendix 6-B, Geology and Groundwater, of the Final EIS. The Qva aquifer is present throughout virtually the entire project area, and flow in this aquifer is indicative of regional flow.

Response to Comment C3-65

Liquefaction at portal sites and shallow sections of tunnel is a possibility in areas with loose alluvial soils. Protecting against liquefaction is a standard part of geotechnical and structural engineering design, and portals or tunnels constructed in areas subject to liquefaction would be designed to withstand the effects of liquefaction.

Response to Comment C3-66

Grouting ahead of the tunnel boring machine is one method that would be available to the tunneling contractor to control groundwater seepage. Please refer to the response to Comment C3-45 in this letter for additional information.

Response to Comment C3-67

Dewatering through construction of wells from the surface is not anticipated for servicing the tunnel boring machine, so there would be no impact to traffic from this activity. The primary surface activities currently planned during conveyance system construction are those at primary portals. Traffic analyses have been conducted for these areas.

Also, a monitoring program may be implemented during operation of the conveyance system if results of the construction monitoring program indicate the need to do so. Both the construction and operations monitoring programs would be developed in consultation with regulatory agencies, the water districts, and other interested parties. This monitoring program is discussed in more detail in Appendix 6-B, Geology and Groundwater, of the Final EIS.

Response to Comment C3-68

It is anticipated that all dewatering activity would be contained within the portal site and hoses would most likely not cross any roadways. If hoses were to cross roadways, it would not occur frequently enough to alter the traffic analysis. Please refer to Appendix 6-F, Groundwater and Stormwater Management at the Candidate Portal Sites, of the Final EIS for disposal options from dewatering at portal siting areas. Detailed plans for dewatering would be prepared once the final alternative has been selected.

Response to Comment C3-69

More refined estimates for groundwater inflow and seepage volumes have been developed and are included in Appendix 6-B, Geology and Groundwater, of the Final EIS. The term “low” has been replaced with specific numerical values, and the mechanisms that provide or allow for groundwater inflows have been described more specifically.

Response to Comment C3-70

A Conveyance Construction Groundwater Monitoring Plan would be prepared and implemented by King County prior to the initiation of conveyance construction. Although no overall adverse affect on groundwater flow or quality is anticipated to occur as a result of conveyance construction, the size of the project and complexity of subsurface conditions warrants a precautionary monitoring program. The primary purpose of the monitoring program would be to provide early warning of declining water levels, or other adverse effects in areas considered to be sensitive. Sensitive areas could include Class B water systems, vulnerable wetlands and streams, or wellhead protection areas near the water sources for Class A water systems. Specific precautionary measures are warranted for the Olympic View Water District area and the Lake Forest Park Water District area, given the importance of the groundwater resource to these areas.

Also, a monitoring program may be implemented during operation of the conveyance system if results of the construction monitoring program indicate the need to do so. Both the construction and operations monitoring programs would be developed in consultation with regulatory agencies, the water districts, and other interested parties. This monitoring program is discussed in more detail in Appendix 6-B, Geology and Groundwater, of the Final EIS.

C3-71 How was it determined that potential impacts to downgradient wells would be low (relative to City of Lake Forest Park wells)? Please show the wellhead protection zone relative to conveyance corridors and provide a more complete evaluation of impacts and mitigation measures. How will the proposed tunneling and portal construction operations impact recharge areas? What are operational impacts and mitigation relative to recharge areas? Please show the wellhead protection zone for the Lake Forest Park well field.

C3-72 How will unanticipated soil and water contamination be addressed during tunneling and dewatering operations (specifically). What will monitoring consist of? What will be frequency and type of testing?

C3-73 Recommend including the lining of tunnels as plan element to reduce potential for leakage from force-mains or for groundwater infiltration into gravity lines.

C3-74 More discussion about impacts and mitigation from tunnel machine rescue shafts should be included. How will this be accomplished? What are impacts? What if this is under a regulated sensitive area?

CHAPTER 6 – SURFACE WATER

6.1 AFFECTED ENVIRONMENT

No comment.

6.2 IMPACTS

C3-75 6.2.1 ***Study Methodology.*** Limited site reconnaissance of portal and pump station siting areas was performed. Which sites were visited? What level of assurance is there that the site

C3-76 investigations are adequate with respect to the six criteria for assessing impacts on aquatic life presented on page 6-20?

6.2.2 ***Treatment Plant Sites***

C3-77 6.2.2.1 ***Erosion.*** What are the estimated volumes of sediment expected to impact surface water bodies during the projected six-year construction period for the treatment plant sites? A comparative evaluation of erosion impacts cannot be accomplished with the information provided.

C3-78 ***Dewatering.*** Use of injection wells to recharge dewatering groundwater would require treating the water to levels acceptable to Ecology. If this approach is chosen, how will this be accomplished? What quality controls will be implemented to prevent contaminated dewatering water from being injected into aquifers?

Unocal Site

C3-79 ***Erosion.*** Quantitative estimates of sediment volumes that could affect surface water associated with site grading and construction are not provided. Estimates of suspended sediment from barge dock construction are not provided.

C3-80 ***Dewatering.*** No quantitative evaluation of impacts to surface water bodies from dewatering is provided.

GeoEngineers A-2 File No. 0146-093-01

Response to Comment C3-71

A more complete evaluation of conveyance system effects on the Lake Forest Park wells has been developed based on new information obtained during the ongoing Brightwater pre-design studies and from the Lake Forest Park Water District. The Lake Forest Park wellhead protection area is shown on figures in Appendix 6-B, Geology and Groundwater, of the Final EIS, and the effects of conveyance construction are discussed in this appendix in more detail. Chapter 6 of the Final EIS also discusses this issue.

The proposed portal and tunnel construction is not anticipated to affect groundwater "recharge" areas. Although some limited recharge may occur in the Lake Forest Park area, it is essentially a discharge area. Most recharge occurs over a broad portion of the upland north of Lake Forest Park.

Please refer to the response to the Washington State Department of Ecology, Comment W5-9, for a more complete summary of the additional analyses completed by King County for the Lake Forest Park area.

Response to Comment C3-72

Procedures for handling unanticipated soil and/or groundwater contamination would be developed as part of the conveyance system design. The basic process includes a Phase 1 environmental assessment of the chosen alignment (after the EIS is finished) to identify areas with demonstrated or potential contamination. Additional investigations would then be undertaken for those areas with demonstrated contamination, unless existing information is sufficient to define the risk and the measures necessary to avoid risk during construction. Otherwise, the contract documents would specify what measures the contractor and the County would take if contaminated materials were encountered. Typically, these measures include a cease-work provision until the problem is evaluated and a solution defined. The

nature of the evaluation and solution is highly dependent on the specifics of the situation.

Response to Comment C3-73

Please refer to Chapter 3 and Appendices 3-B, Project Description: Conveyance, and 6-B, Geology and Groundwater, of the Final EIS for a description of the lining system that would be part of the tunnel design to limit groundwater infiltration or seepage out of the tunnel.

Response to Comment C3-74

The only portals that have been planned are those described in the Final EIS for the construction of the conveyance system. Rescue shafts would only be constructed during emergencies. The construction, impacts, and mitigation of such shafts would be evaluated on a case-by-case basis if the need ever arises.

Response to Comment C3-75

Site reconnaissance was conducted at all portal sites for the three corridor alignments. The initial reconnaissance was limited to observations from public right-of-way and lacked the necessary detail to produce comprehensive impact assessments. The reconnaissance identified sensitive areas in order to position construction activities as far away from streams and wetlands as possible. Detailed baseline studies would be conducted for streams, wetlands, and water bodies during the predesign process for the Brightwater conveyance system. These studies would generate the information needed to develop site-specific mitigation measures.

Response to Comment C3-76

The six criteria referenced in the comment are used to assess impacts associated with the discharge of treated effluent on aquatic life in the marine environment, and are to be used when there are effluent constituents for which there are no state or federal standards. These criteria pertain to the discussion of the marine outfall zone in Section 6.1.4 of the Draft EIS, and do not apply to the freshwater environment in the vicinity of the portal and pump station siting areas discussed in Section 6.2.1.

Response to Comment C3-77

Please refer to the response to Comment C3-46 in this letter.

Response to Comment C3-78

Discharges from dewatering operations are expected to be of two types: (1) shallow groundwater from subsurface drains or pumped dewatering wells, and (2) water collected from sumps and the bottoms of excavated areas. Intercepted shallow groundwater would be of high quality, essentially that of the native groundwater. If pumped back into an injection well, this water would not require treatment to comply with Ecology standards. This water is likely to have a low dissolved oxygen concentration. If discharged to a channel, simple aeration would be sufficient to meet Washington stream standards. Some of the potential project sites could have contaminated soils as a result of past activities. All dewatering flows would be initially tested for potential contaminants. If contaminant concentrations exceeding state criteria are found, appropriate treatment would be provided. For instance, if petroleum hydrocarbons are found, the treatment might involve air-stripping or filtration through carbon media.

Water pumped from open-cut excavation or borings would probably come into contact with disturbed soils and would likely be turbid. Depending upon the type of construction activity, this water could contain other contaminants such as fuels or lubricants. This type of dewatering flow would be discharged to one or a series of settling ponds to settle the silt and allow the water to clear, or receive some other treatment to reduce turbidity to meet state water quality standards. Oil/water separation would be carried out, if needed. If necessary, advanced treatment, such as an addition of coagulants and pH adjustment, could be carried out to remove the fine particles and clarify the water, prior to discharge.

At this time, there are no plans to dispose of dewatering flows via injection wells. Further information on dewatering management at the treatment plant sites can be found in Appendices 6-B, Geology and Groundwater, 6-C, Management of Water Quality During Construction at the Treatment Plant Sites, and 6-D, Permanent Stormwater Management at the Treatment Plant Sites, of the Final EIS.

Response to Comment C3-79

Please refer to the response to Comment C3-46 in this letter regarding quantification of sedimentation impacts. The barge dock was identified in the Draft EIS as a potential measure to mitigate traffic impacts. However, it is no longer included as a proposed project element for the Unocal site. Should the barge dock be reconsidered for implementation at some future time, additional site-specific evaluations would be conducted.

Response to Comment C3-80

Please refer to the response to Comment C3-78 in this letter.

Route 9 Site

C3-81 ***Erosion***. Quantitative estimates of sediment volumes that could affect surface water associated with site grading and construction are not provided. Quantitative estimates of soil contaminants from erosion are not provided.

C3-82 ***Dewatering***. See comment under Unocal Site.

C3-83 ***Rerouting of Water Courses***. No quantitative estimates of sediment production to Bear Creek and Sammamish River are provided for relocation of water courses.

6.2.2.2 Operational Impacts

Unocal Site

C3-84 ***Emergency Outflows***. What are the estimated contaminant loads likely to occur in the event of an overflow for Puget Sound, Sammamish River and Lake Washington?

C3-85 ***Floods***. The text indicates that no consideration of possible tsunami impacts will be incorporated into the plant design, although facilities in coastal areas subject to tsunamis are being developed that incorporate tsunami mitigation measures.

6.2.3 Conveyance corridors

6.2.3.1 Construction Impacts

C3-86 ***Erosion***. See comments under Treatment Plant sites and Unocal site.

C3-87 ***Dewatering***. See comments under Treatment Plant sites and Unocal site.

C3-88 ***Dewatering***. How was the assessment of "no additional impacts" for streams receiving flows from dewatering activities determined?

C3-89 Table 6-5 for portal 10 refers to McAleer Creek as the primary receiving water, but maps and text indicate it is Lyon Creek within portal. Please clarify or correct. If both are affected, please say so.

6.2.3.2 Operational Impacts

C3-90 ***Emergency Overflows***. Is there a manual in-place for addressing emergency overflows for the current system? What are some of the sizes of previous emergency overflows? What has been the impact of these? What have monitoring and clean-up activities consisted of in the past? What would they likely consist of for this project?
Is it preferable to route this to Lake Washington or to Sammamish River?

6.3 Mitigation

C3-91 Details on monitoring and mitigation are limited for streams, wetlands and water bodies near portals. Baseline studies should be accomplished for impacts assessment and monitoring during and after construction.

GeoEngineers A-3 File No. 0146-093-01

Response to Comment C3-81

The Route 9 site currently supports several auto wrecking yards, and portions of the site may contain contaminated soil. Prior to major construction activity at this site, extensive soil testing would be conducted by King County to identify contaminated areas. Contaminated soils and other hazards would be removed from the site and cleanup measures implemented prior to construction (refer to Chapter 9 of the Final EIS). Runoff from the project site would be monitored for any contaminants found at the site to assure that they are not inconsistent with water quality criteria. If a contaminant is found to be inconsistent with water quality criteria, the source would be identified and remediated and/or additional treatment measured would be implemented to remove the contaminant. Please refer to the response to Comment C3-46, regarding quantification of sedimentation impacts.

Response to Comment C3-82

Please refer to the response to Comment C3-78 in this letter.

Response to Comment C3-83

Although site preparation could take up to 3 years, the associated sedimentation impacts are considered to be temporary impacts in that they would not be permanent in nature.

All stream relocation would occur in accordance with the permit conditions and requirements imposed by the U.S. Army Corps of Engineers, Washington State Department of Fish and Wildlife, Washington State Department of Ecology, NOAA Fisheries and/or U.S. Fish and Wildlife Service, and Snohomish County. Permit conditions are intended to protect sensitive resources during and following construction. Permit conditions would likely limit construction to work windows of time that avoid critical spawning and migration periods. Flows in the channel being reconstructed would be temporarily diverted upstream of the construction activity, piped or otherwise routed around all disturbed areas, and

discharged downstream in accordance with applicable permit requirements.

Following their construction and vegetation, flow diversion to the relocated stream channels would be delayed for 3 to 6 months to allow for their stabilization. This would minimize the chance for sedimentation in the new channels after flows are returned. Based upon past experience with new stream channels, sedimentation is expected to return to background levels after the first season and is not expected to affect existing spawning beds. It is anticipated that at least a portion of the relocated streams would provide additional high-quality spawning and rearing habitat.

Response to Comment C3-84

Contaminant loads in the event of an overflow have not been estimated, as they would vary depending on the volume of the overflow and would occur rarely, if ever. The estimated contaminant loads that are likely to occur in the event of an overflow depend on the length of overflow and wastewater quality at the time of the overflow. For example, a 1 hour overflow of 36 million gallons of wastewater would discharge approximately 2,500 pounds of BOD and 2,583 pounds of TSS. However, emergency conditions during storm events would be addressed using the five-part emergency flow management system to prevent discharges of untreated wastewater to the extent possible. This five-part system consists of a series of planned actions where operators can use the new conveyance and treatment facilities to significantly reduce the probability of system overflows during unusual flow and operational conditions. The flow management system includes a number of actions that operators can use under a variety of conditions to contain and manage flows: (1) In the case of a plant system failure, flow could be diverted to one of the other two regional plants; (2) Excess flows could be stored in existing facilities (up to 12 million gallons) in Kenmore and Bothell; (3) With the Brightwater System, excess flows could also be stored in new influent conveyance tunnels (up to 11 million gallons); (4) Standby power and emergency generators could be used to continue pumping flows in the event of power failures; and (5) Partially treated wastewater could be diverted around the treatment plant directly to Puget Sound.

Response to Comment C3-85

In hydrologic analyses performed for EISs, floods in excess of the 100-year event, such as a tsunami, are typically not reviewed, as they are unlikely to occur during the life of the project. The likelihood of a tsunami impacting the Unocal plant during its lifetime is therefore remote. SEPA regulations require that probable impacts be addressed, but not those that merely have a possibility of occurring, but are remote or speculative (WAC 197-11-782). Since the likelihood of a tsunami affecting the Unocal site is remote, the impacts associated with a tsunami were not addressed in the Final EIS. The project will be designed to comply with the Criteria for Sewage Works Design (Washington State Department of Ecology, December 1998) and other applicable design requirements for reasonably probable operating conditions.

Response to Comment C3-86

The erosion and sedimentation impacts evaluation that has been conducted is appropriate to determine the potential level of significance, as required by SEPA. Please refer to the response to Comment C3-8 in this letter.

Response to Comment C3-87

At this time there are no plans to dispose of dewatering flows via injection wells. Injection well water would be treated according to methods described in Appendix 6-F, Groundwater and Stormwater Management at the Candidate Portal Sites, of the Final EIS. Treatment techniques would take into account the Washington State Department of Ecology's *Stormwater Management Manual for Western Washington* (August 2001) to comply with state surface water quality standards in the receiving waters. Monitoring would be conducted, as outlined in the conveyance facility Individual NPDES Construction Stormwater permit SWPPP approved by Ecology, to ensure contaminated water is not entering the aquifer. Also, please refer to the response to the Washington State Department of Ecology, Comment W5-69.

Response to Comment C3-88

The procedure for assessing impacts to receiving water bodies in the Draft EIS involved comparing the average annual discharge of the water body to the anticipated dewatering discharge rates for each portal. If the maximum dewatering discharge were less than the average annual discharge, impacts would include water quality degradation as a result of erosion of excavated soils, construction spills, and construction waste. The “no additional impacts” stated that except for the impacts listed previously, there would be no other impacts to streams from dewatering discharge. This impact analysis has been revised based on new information. Ecology has established guidelines that require a stream study if the dewatering discharge rate is greater than 10 percent of the flow rate of the receiving water body. The stream study would need to show that the additional discharge would not impact the water quality, channel morphology, or aquatic biota of the stream.

Since the publication of the Draft EIS, more detailed hydrogeologic analyses have been conducted, and the dewatering discharge rates have been reduced. The Final EIS text has been revised to reflect the results of the new analysis; refer to Chapter 6 for a revised discussion of this issue. Should dewatering discharge rates exceed Ecology’s 10-percent guideline, detailed stream studies would be conducted or alternative disposal methods would be used. The detailed stream studies would be conducted prior to construction as part of the project baseline studies, and would include the collection and analysis of data to verify that additional discharge would not impact water quality, channel morphology, or aquatic biota of the stream. Alternative disposal methods may include discharge to a sanitary sewer, infiltration system, or injection well. These alternative disposal methods would be considered separately or in combination with discharge to a stormwater drainage system or directly to a stream. Also, please refer to the response to Comment C3-75 in this letter.

Response to Comment C3-89

The project description for the Brightwater project has changed since the publication of the Draft EIS, in response to Draft EIS comments and revised mitigation measures. The Final EIS text has been revised to reflect the new project description, which incorporates these mitigation components. Portal 10 is now classified as a secondary portal for the Unocal corridor only, and is no longer an option for either of the Route 9 corridors. Secondary portals are retained for ancillary purposes only. Please refer to Appendix 3-B, Project Description: Conveyance, of the Final EIS for a description of secondary portals and the scenarios under which they would be used. The final decision regarding secondary portals would be made during final design, after the conveyance route has been selected and final locations for portal sites have been chosen. Secondary portals would require up to 0.5 of an acre and have a diameter shaft of about 8 feet.

Response to Comment C3-90

For Brightwater, an emergency response procedure has been established and is discussed in the response to Comment C3-84. The preferred location of an emergency overflow is Puget Sound. For information regarding past overflows, please refer to the response to the Washington State Department of Natural Resources, Comment W3-117. For information regarding an existing manual that discusses emergency overflow, please refer to the response to the Washington State Department of Ecology, Comment W5-35.

Response to Comment C3-91

Please refer to the response to Comment C3-75, in this letter, for a discussion of proposed baseline monitoring, the response to the City of Bothell, Comment C2-9, for a discussion of construction monitoring, and the response to the Washington State Department of Natural Resources, Comment W3-148, for a discussion of mitigation.

CHAPTER 7 – PLANTS, ANIMALS AND WETLANDS

C3-92 **General Comment:** The project is so poorly defined at the present time so that it is difficult to assess the actual potential impacts and the adequacy of potential mitigation measures. While it is the intent, as stated in the DEIS, to avoid sensitive areas and habitat, it is clear that disturbance or impacts to these areas can/will occur.

C3-93 7.1 Affected Environment

7.1.2.1 Page 7-11, first paragraph, 9th line, typo: "7intentional" [sic]

C3-94 7.1.3 Conveyance Corridors

The figures from the surface water section and habitat types such as "highly vegetated areas", "major water", "small streams" and "wetland boundaries" for each portal area. It would be helpful to show the recommended or required buffer areas on the maps.

C3-95 7.1.3.1 Page 7-36. Portal 11 indicates bald eagle nesting territory within 0.5 miles of the portal siting area.

7.2.3 Impacts

C3-96 7.2.3.1 Construction Impacts

Impacts common to both corridors. Displacements of streams or filling of wetlands are "not anticipated", but further down text reflects that this might be a possibility. More specific details are needed in order to evaluate actual impacts and review adequacy of mitigation alternatives.

C3-97 See chapter on Surface Water

What about local codes with respect to tree removal?

Note that revegetation of trees and shrubs will take 5 to 25 years at portal sites as for treatment plant sites.

C3-98 7.2.3.2 Operational Impacts

Emergency Overflows. See comments about Emergency Overflows under Surface Water chapter.

7.3 Mitigation

C3-99 What does "minimize lighting for night work near surface waters and wetlands" mean? Is 1 lux at property lines as proposed in the "Light and Glare" section appropriate or should it be more stringent? What if project property line encroaches across surface waters or wetlands?

C3-100 What will monitoring and mitigation likely consist of in streams?

How will losses from emergency overflows be evaluated and mitigated?

C3-101 Provide mitigation actions in the DEIS, not by reference to technical appendices.

No mitigation recommendations are provided or evaluated relative to noise impacts to bald eagles (e.g. at Portal 11). Should there be restrictions during work day? Are there seasonal restrictions that should be provided?

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Response to Comment C3-92

Both the Draft EIS and the Final EIS include a discussion of the probable significant adverse environmental impacts and the reasonable mitigation measures for these identified impacts beyond those characterized in this comment. Additional analysis has been conducted that relates to probable significant adverse environmental impacts to sensitive areas and habitat areas that will not be mitigated or regulated to a level of insignificance. This additional analysis is included in Chapter 7 of the Final EIS.

Response to Comment C3-93

Thank you for your comment. The text has been revised in the Final EIS.

Response to Comment C3-94

In Chapter 7 of the Final EIS, upland buffers regulated by local jurisdictions are indicated on figures for wetlands, streams, and major water bodies (e.g., Lake Washington, Sammamish River). These are the widths that will be enforced by local jurisdictions in implementing their respective critical area ordinances.

Response to Comment C3-95

According to the Washington Department of Fish and Wildlife (WDFW) priority habitats and species (PHS) database, previously documented bald eagle nests are located along the shoreline of Lake Washington south of Portal 11. This information is presented in Chapter 7 of the Final EIS.

Response to Comment C3-96

Chapter 7 of the Final EIS clarifies where impacts to wetlands are anticipated. In the Final EIS, three to four candidate portal sites are identified in each portal siting area. Candidate portal site selection involved avoiding impacts to high-quality wetlands, streams, and mature upland forests wherever feasible. Based on the known boundaries of

wetlands, streams, and mature upland forest, impacts were calculated based on anticipated portal construction footprints. Preferred portal sites avoid impacts to the maximum extent practicable. There would be no direct impacts to any known Class 1 wetlands and no streams displaced. Impacts to Class 2 wetlands would be limited. Please refer to the response to Comment C3-25 in this letter, for additional information.

Response to Comment C3-97

Local codes pertaining to tree removal, significant tree surveys, and tree retention are provided in Chapter 7 of the Final EIS. The Final EIS also notes that revegetation of trees and shrubs can take many years to reach maturity. For this reason, impacts to mature upland forest, wetlands, and buffers would be avoided to the extent practicable. If impacts cannot be avoided, areas not actively used for facilities would be revegetated after construction. In selecting preferred areas for candidate portal sites, King County sought out sites that have either no vegetation, immature vegetation, or exotic/invasive vegetation. These sites have opportunities for native restoration after construction, which over time will develop into mature shrub and/or forested conditions.

Response to Comment C3-98

Thank you for your comment.

Response to Comment C3-99

Currently there is no lighting planned along the water or adjacent to the wetland areas. If illumination is required in these areas the methods discussed in Chapter 13 of the Final EIS would be used to reduce the impact. These include directing the light away from the water, and if practical, use of lower-wattage lights and lower mounting heights. Assigning a lower value for the lighting is difficult because locating a light is one area that may be required for safety or security.

Response to Comment C3-100

Monitoring of streams by King County to assess project impacts would include specific monitoring to comply with federal, state, and local permitting requirements. Where appropriate to address impacts, monitoring would include turbidity monitoring during construction, and monitoring of dewatering discharge rates to ensure that impacts to streams are minimized. Detailed monitoring plans would be determined in consultation with permitting agencies as the project progresses. Please refer to Chapter 6 of the Final EIS for additional information on monitoring of streams for stormwater and dewatering impacts.

Response to Comment C3-101

King County will comply with U.S. Fish and Wildlife Services and NOAA Fisheries requirements regarding protection of endangered species. Please refer to Chapter 7 of the Final EIS for more information on how impacts to plants and animals will be mitigated.

CHAPTER 9 – ENVIRONMENTAL HEALTH

C3-102 **General comment:** No mention is made in this section of the "Brightwater Conveyance System Hazardous Materials and Waste" technical memo by HDR Engineering dated June 26, 2002.

C3-103 General mention of potential sources of contaminated soil and water, whether known or not known at this time (e.g., heating oil tanks, PCB-containing transformer oil spills, former dry cleaners and gas stations, etc.) is warranted.

C3-104 9.2.3.1 Comment: Possible disruption during construction of contaminated soils or groundwater at portal siting areas **not mentioned. Reader should be at a minimum referred to Earth and Groundwater section**. Note: Spills or leaks from construction equipment (fuel and hydraulic fluid) and construction materials (e.g., concrete) mentioned and "*subject to onsite spill containment procedures consistent with the requirements of the local jurisdiction..*"

C3-105 Comment: What specific codes are applicable? What are procedures likely to consist of?

C3-106 9.2.3.2. Operational impacts caused by spills, leaks or other releases will be mitigated by "*designed [conveyance facilities] in accordance with all applicable Ecology and UFC requirements, which include spill prevention and containment... At portals, pump stations and at odor control facilities, onsite spills could enter the storm drainage system at the site.*"

Comment: Cite codes and regulations by number? What possible mitigation for potential spills into the storm drainage system?

C3-107 9.2.3.2 Although "*explosions in recently constructed conveyance systems are extremely rare*" (as a result of accumulated methane or hydrogen sulfide), "*special provisions to prevent gas buildup will be made because of the anticipated depths of tunnels and access facilities.*" "*Conveyance facility design will include measures to minimize hydrogen sulfide productions*" and "*all facilities... will be equipped with meters to monitor hydrogen sulfide. Manholes and pipelines will be manually opened or entered on a routine basis and inspected and monitored for hydrogen sulfide*"

Comment: No plan/measures provided for review.

C3-108 Page 9-25: Typos – paragraph 1: "...emergency overflows that would occur with (sic) the existing system... and paragraph 3 "...for both the Unocal and Route9 (sic) systems..."

C3-109 9.2.3.2 The DEIS cites need for the Brightwater project to "*reduce the frequency and volume of emergency overflow...if Brightwater were not built.*" Under the Brightwater system, "*a safety relief point would be located in Kenmore, near the existing Kenmore Pump Station. This safety relief point would discharge influent into the Sammamish River and/or Lake Washington.*" And "*discharge from the safety relief point would be very rare, the result of catastrophic events.*" These emergency overflows "*would result in increased concentrations of bacteria and toxicants.*" Mitigation proposed is to post signs to warn the public to avoid contact with the water, debris and sediments. "*King County would monitor water quality...and consider cleanup methods as appropriate*".

Comment: Who decides whether cleanup is appropriate, and what is appropriate?

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Response to Comment C3-102

The findings of this report have been incorporated into Appendix 6-B, Geology and Groundwater, in the Final EIS.

Response to Comment C3-103

Chapter 4 of the Draft EIS contained information on potential contamination at the treatment plant sites. More information on potential contamination, particularly at candidate portal sites, has been included in Appendix 6-B, Geology and Groundwater, and Chapter 1 of the Final EIS.

Response to Comment C3-104

The potential of encountering contaminated soils and groundwater is discussed in Chapter 4 of the Final EIS. A reference to this chapter has been added to Chapter 9 of the Final EIS.

Response to Comment C3-105

Local municipal codes vary in their requirements for cleanup of spills from construction, but all are based on the minimum performance standards of the State Building Code, which incorporates requirements of the Uniform Fire Code (RCW 19.27). For example, Lake Forest Park addresses this issue through its SEPA substantive authority, acknowledging that federal, state, and regional regulations are the primary means of addressing and mitigating risks associated with hazardous and toxic materials. Kenmore regulates use and handling of hazardous materials through municipal code Section 15.10, citing the Uniform Fire Code. In Shoreline, an emergency response spill/cleanup plan would be prepared and employees properly trained to react to accidental spills (Shoreline Code, 20.80.450). Shoreline also requires a hazardous materials management plan, also citing the Uniform Fire Code.

As described in Chapter 9 of the Final EIS, all chemical storage and handling during construction and operation will comply with applicable local, state, and federal regulations, including the Uniform Fire Code, Resource Conservation and

Recovery Act, and Occupational Safety and Health Act (OSHA). Contractors would be responsible for following proper handling of chemicals and appropriate procedures during construction.

Response to Comment C3-106

Please refer to the response to the Washington State Department of Natural Resources, Comment W3-120, and the response to the Washington State Department of Ecology, Comment W5-77.

Response to Comment C3-107

Please refer to the response to the City of Edmonds, Comment C9-30. As project design progresses, more information will be developed regarding specific plans for addressing the potential buildup of methane or hydrogen sulfide in the proposed effluent tunnel or at the treatment plants. As was disclosed in the Draft and Final EIS, a number of specific measures will be used in the project design to minimize such risks, including routine monitoring of gas levels to help prevent buildup and use of ventilation shafts. Ventilation and odor control would be provided to minimize accumulation of methane and hydrogen sulfide. Refer to Chapter 9 of the Final EIS.

Response to Comment C3-108

Thank you for your comment. The Final EIS text has been revised to correct for typos.

Response to Comment C3-109

Please refer to the response to the Washington State Department of Ecology, Comment W5-35.

C3-110 9.2.6 *"The Brightwater project will significantly reduce environmental health risks compared to conditions without the facility. However increased wastewater flows accompanying regional growth (sic) population will contribute incrementally to increased environmental health risks in the region. King County will continue operation and maintenance practices to minimize this risk".*

Comment: Are the operation and maintenance practices existing? What are they?

C3-111 9.3.1.2 Comment: Cleanup of hazardous materials in accordance with MTCA and Washington State SMS cited in 9.3.1.2. Would like to see a discussion of what would happen if contaminated soil and groundwater are encountered during excavation. What will be the process to characterize? Will spot batch samples be obtained if no indication of contamination to verify field screening?

C3-112 9.3.1.1 Comment: Statement that air emissions will be in compliance with air quality standards. If nuisance odors are detected, even with odor control in use, what additional measures can/will be implemented?

CHAPTER 11 – LAND AND SHORELINE USE

C3-113 **General comment:** The comprehensive plans for the City of Lake Forest Park and the City of Kenmore are not summarized in the document (as for King and Snohomish Counties and other cities). The document should refer more directly to these plans and the critical elements contained in them. See Attachment B for some pertinent elements of these comprehensive plans, as well as referring to the documents themselves.

C3-114 **General comment:** The maps provided in Chapter 11 show zoning, but not public facilities, such as schools, city hall, parks, etc. Although included in the text, would also be helpful on the figures. Also, some lots are shown as "white" in the figure, but no explanation is given. Use of colors with more contrast or different line types would be helpful in differentiating between different

C3-115 characteristics (e.g. wetlands, highly vegetated areas, and smaller streams). Will low income housing be affected? Environmental Justice will be an element in National Environmental Policy Act process.

C3-116 **General comment:** This section should refer to the potential impacts of rescue shafts (as addressed in Section 4.3.2) and the dewatering wells (addressed in "Brightwater Conveyance System Conceptual Geotechnical Assessment" prepared by Shannon and Wilson and HWA Engineering, dated October 2002). Both measures likely will be conducted as field calls, yet the planning has to be in place to address all applicable codes and impacts. For example, the dewatering wells are estimated

C3-117 to be open from several days to weeks. Drilling the wells and maintaining the wells will have impacts. Additionally, no mention is made under impacts on the dewatering at the portal sites. Presumably, dewatering will require transporting water from the portal via hoses to sanitary sewer

C3-118 connections. Estimated dewatering will be of a few hundred to several thousand gallons per minute. The dewatering hoses could, at a minimum, cause traffic and access restrictions. Have these issues been considered in the traffic analysis?

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Response to Comment C3-110

King County coordinates and administers several programs to minimize environmental health risks related to the operation and maintenance of existing wastewater facilities. These programs include water quality monitoring in the vicinity of discharge locations and public notices near combined sewer overflow (CSO) outfall locations.

There are several strategies, both in project design and in King County's response to spills during operation that would minimize human health risks. Please refer to the response to the Washington State Department of Ecology, Comment W5-35, for more information on procedures to address overflows and spills, and for more discussion about how the project design would minimize the risk of overflows.

As part of its NPDES requirements, King County has also conducted an extensive point source monitoring program for over 20 years. The purpose of the program is to assess the quality of each facility's effluent, the receiving water around each outfall, and nearby beaches to ensure that the facility is meeting the goals of the Clean Water Act and complying with state water quality regulations. King County has worked jointly with the City of Seattle and the Seattle-King County Health Department in posting warning signs at CSO locations and undertaking public outreach to notify the public of potential risks associated with swimming, fishing, or other recreational activities near CSO outfalls. King County is also partnering with agencies and organizations to clean up contaminated sediment near CSOs that has resulted largely from historical contamination in industrialized waterways, such as the Duwamish Waterway.

Response to Comment C3-111

Please refer to Chapter 4 of the Final EIS, which discusses the potential for encountering contaminated soil and groundwater, and potential mitigation options.

Response to Comment C3-112

For information on the odor prevention program and the monitoring that would be performed on the odor control system, please refer to the response to the Washington State Department of Transportation, Comment W2-5. Additional information about the wastewater treatment process and the odor control technology selected is provided in Appendix 5-A, Odor and Air Quality: Treatment Plant, of the Final EIS.

Response to Comment C3-113

Please refer to the response to Comment C3-12 in this letter.

Response to Comment C3-114

Public facilities are shown on Figures 17-1, 17-2, and 17-3 in Chapter 17 of the Draft EIS. A number of the graphics in Chapter 17 of the Final EIS have been revised to provide more clarity.

Response to Comment C3-115

The State Environmental Policy Act (SEPA) does not require the evaluation of socioeconomic impacts. Under the National Environmental Policy Act (NEPA), potential impacts to low-income and minority populations should be identified and disclosed, in accordance with President Clinton's Executive Order on Environmental Justice (Executive Order 12,898). U.S. Census Bureau statistics summarized by the Puget Sound Regional Council indicate that, based on 1999 income data, 1.8 to 8 percent of the population in the communities within the Brightwater System siting area were classified as living below the poverty level (PSRC, 2002). The distribution of low-income population within each community has not been mapped or analyzed with respect to portal siting areas or treatment plant sites at this time; however, it is not anticipated that low-income housing will be affected. Identification of possible portal sites has attempted to avoid directly affecting residential areas as much as possible. Minority population statistics in the Brightwater System siting area have not been analyzed. Environmental justice issues will be further analyzed as part of the NEPA documentation.

Reference:

Puget Sound Regional Council (PSRC). 2002. *Characteristics of Poverty, Puget Sound Region Cities and Census Designated Places*. Source: Summary File 3 – 2000 Census of Population and Housing, United States Bureau of the Census.

Response to Comment C3-116

The section cited in the comment has been substantially revised since the Draft EIS. The likelihood of needing rescue shafts is remote considering today's tunneling technology and monitoring systems. The impacts analyses have been conducted for situations that have a low to high likelihood of occurring. For these situations, detailed groundwater impact analyses have been conducted for the conveyance pipelines and portals for both construction and long-term operations conditions. Please refer to Appendix 6-B, Geology and Groundwater, of the Final EIS.

Response to Comment C3-117

Conventional dewatering wells are no longer being considered for groundwater control during conveyance system construction, as described in Appendices 3-B, Project Description: Conveyance, and 6-B, Geology and Groundwater, of the Final EIS. For portals, shoring methods have been planned that reduce the need for dewatering, and the only wells anticipated would be temporary pressure relief wells in the base of the portal excavation that would be there only until a concrete slab could be poured. Appendix 6-F, Groundwater and Stormwater Management at the Candidate Portal Sites, of the Final EIS addresses handling of groundwater removed from the portals. For tunnels, groundwater control would be achieved through a combination of in-tunnel depressurization and ground conditioning (grouting). Please refer to the response to the Washington State Department of Ecology, Comment W5-9, for a more complete summary of the additional analyses completed by King County for the portals.

Response to Comment C3-118

Please refer to the response to Comment C3-68 in this letter.

C3-119 11.1.1.5 Does summarize Comprehensive Plans for Kenmore and Lake Forest Park and may miss key elements.

C3-120 11.2 Notes on land use impacts: Section 11.1.3.1 addresses current land use. Note in Lake Forest Park, Portal Siting Area 7 (if necessary) includes inactive public school and Bruggers Bog/headwaters of west fork of Lyons Creek with residential development. Portal Siting Area 10 includes a commercial shopping center and residential use. In Kenmore, shoreline requirements along Sammamish River and Swamp Creek (both "urban" shoreline designations) subject to requirements under KCC 25.16.030. Portal Siting Area 34 includes residential, commercial, service, and recreation (including Swamp Creek Park and Sammamish River Trail), large tracts of vacant land and a hotel. Portal Siting Area 11 is commercial, retail, service, office and industrial uses.

Comment: Portal Siting Area 12 is indicated as located in Bothell on page 11-19, but is in Kenmore and King County.

Notes (continued): Land use in Portal Siting Area 12 is residential on large lots. Portal Siting Area 44 comprises large, vacant parcels or residential use, one farm and a mobile home park. (Westhill Park shown on the Thomas Bros. Guide in this portal siting area is not a public park.) Portal Siting Area 45 consists of residential, community (social and religious), office, Linwood Park and a private school.

C3-121 11.2.3.1 Although addressed in Section 11.2.2.1 (for treatment plant sites), and not in 11.2.3.1 (conveyance corridor construction impacts), construction will increase "*levels of dust, noise, odors and traffic associated with construction vehicles and machinery*" and "*could impact adjacent residential, commercial and recreational land use.*" Section 11.2.3.1 states that "*Brightwater facilities would be designed so that the portals or the pump station would be located on upland areas* [Comment: where possible?] *in order to avoid impacts to sensitive areas and resources.*" "*Detailed site evaluations would be conducted during the portal siting process to identify sites with the lowest potential land use impacts.*"

Comment: From whose perspective would the "lowest potential land use impacts" be made?

C3-122 11.2.3.1 Note: Worst-case, "*construction..could result in the displacement of up to 2 acres of existing land uses...only 1 to 2 acres of the 72-acre siting area would actually be required for construction.*" "*Existing uses would be replaced with a public facility use.*" "*...construction has the potential to displace some residences, businesses or recreational areas.*"

C3-123 11.2.3.1 "*Pipes will need to be installed to connect existing conveyance facilities to the new influent tunnels at Portal Siting Areas 10 and 11*"

Comment: The locations of these pipes, and presumably, the trenches required to install the pipes are not mapped.

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Response to Comment C3-119

Please refer to the response to Comment C3-12 in this letter.

Response to Comment C3-120

The text in Chapter 11 of the Final EIS has been changed to correct information regarding the location of Portal 12 and to include the additional information you provided. Please note that the location of Portal 12 (Kenmore) was correct in the impacts discussion in the Draft EIS. Please refer to Chapter 11, Affected Environment: Unocal System section, for the revised text in the Final EIS.

Based on additional siting analysis that has been completed since publication of the Draft EIS, Portal 12 is now a secondary portal location for the Unocal System. Please refer to Chapter 3 of the Final EIS for the revised project description details.

Response to Comment C3-121

Decisions on the ultimate location of Brightwater facilities are based on a number of environmental considerations and are not driven by one individual impact or issue such as land use. It is King County's intent to avoid sensitive areas and resources where possible. In the event sensitive resources are impacted, the Final EIS identifies appropriate mitigation to reduce impacts to a level of non-significance.

Response to Comment C3-122

Recent Level 2 portal screening that was conducted as part of the Brightwater conveyance predesign identified candidate sites to carry forward for further screening. These sites met engineering needs and minimized environmental and community impacts. The Brightwater Conveyance Predesign Level 2 Portal Screening process is described in Chapter 2 and Appendix 2-B, Portal Screening Level 1 and 2 Documentation, of the Final EIS. Chapter 11 of the Final EIS

has been revised to discuss the potential impacts associated with proposed construction and operation activities at candidate sites.

Response to Comment C3-123

The location of the pipes at Portal 11 was not documented in the Draft EIS because the location of the portals in the Portal Siting Areas, to which the pipes would connect to, had not been determined. The specific location of pipes would be identified during final design for the selected alternative. Additional detail beyond that described in the Draft EIS is included in Chapter 3 and Appendix 3-B, Project Description: Conveyance, of the Final EIS. Portal 10 is no longer part of the proposal for the Route 9 alternatives. It is a secondary portal for the Unocal conveyance system.

C3-124 11.2.3.1 Residents' impacts may include disruption of daily activities, disruption of sleep by daytime sleepers and impact by dust. "*Businesses... may have temporary delays to access caused by construction vehicles.*" "*Temporary impacts during construction could alter behaviors of local residents*".

Comment: Not specified as to what behaviors.

C3-125 Page 11-44: Typo, paragraph 4 – "...impacts would case (sic) when the project is completed."

C3-126 11.2.3.1 Note: "*Most of the tunneling impacts would not have significant land use impacts....*"

C3-127 11.2.3.1 Note: "*Construction would not be allowed within areas of the Sammamish River shorelines that are designated Conservancy.*" None shown on Figure 11-29.

C3-128 11.2.3.1 Notes on land use impact: At Portal Siting Area 7 (in Lake Forest Park) (optional), "*there are several large developed parcels with large areas of open space that could potentially accommodate a portal...; however, disruptions to businesses and adjacent residential areas would occur.*" A conditional use permit would be required within residential zones. "*Noise, and light and glare from nighttime construction activities has a greater potential to impact adjacent residences than less developed portal siting areas.*" At Portal Siting Area 10 (in Lake Forest Park), "*there are currently no parcels of vacant land large enough to accommodate a portal*" and "*dust, odor, noise and light and glare impacts to adjacent residences*" would result, and "*could also impact adjacent businesses.*" A conditional use permit would be required within residential zones. At Portal Siting Area 11 (in Kenmore), "*there are currently no parcels of vacant land large enough to accommodate a portal*" and "*surrounding land use is likely to be impacted by dust, odor, or noise generated by construction activities and traffic.*" At Portal Siting Area 12 (Kenmore), there is "much lower density than other siting areas...and other developed parcels "could accommodate a portal without displacing existing uses." Adjacent residences likely would notice "noise, light and glare from nighttime construction activities." At Portal Siting Area 34 (in Kenmore), there currently are 20 acres of undeveloped land and there are "*several developed parcels" with "adequate space to site a portal without displacing current uses.*" Dust, odor and noise would be generated during construction and "*nighttime construction activities would be noticeable from adjacent residential neighborhoods.*" Portal Siting Area 44 (in Kenmore) has 16 acres of vacant land. Portal Siting Area 45 (in Kenmore) has 5 acres of vacant land, but "*no single parcel is large enough to site a portal.*" "*Adjacent residential areas could be impacted by day and nighttime construction activities.*"

Comment: Presumably, portal siting in Portal Siting Areas 10 (in Lake Forest Park), 11 and 45 (both in Kenmore), will require condemnation procedures. The remaining portals (34 and 44) may not.

C3-129 Page 11-47: Alternative proposed on page 11-47 to microtunnel between Portal Siting Areas 10 and 11 because of higher development densities. "*A portal would not be constructed at Portal Siting Area 10 if microtunneling is selected.*" This paragraph discusses staging areas required nominally every 1,000 feet for microtunneling.

Comment: The impacts of staging areas every 1,000 feet are not discussed.

GeoEngineers A-8 File No. 0146-093-01

Response to Comment C3-124

Chapter 11 has been changed in the Final EIS to provide clarification.

Response to Comment C3-125

Thank you for your comment. The text in the Final EIS has been revised.

Response to Comment C3-126

Thank you for your comment.

Response to Comment C3-127

Areas of the Sammamish River shoreline that are designated Conservancy are depicted by the solid green shading as indicated in the graphic legend on Figure 11-29 of the Draft EIS. Please refer to updated figures in Chapter 11 of the Final EIS.

Response to Comment C3-128

Thank you for your comment.

Response to Comment C3-129

Based on additional engineering analysis subsequent to the publication of the Draft EIS, the tunnel or microtunnel between Portals 10 and 11 has been eliminated for the Route 9 site. For the Unocal site, Portal 10 is designated as a secondary portal that may not be utilized.

C3-130

11.2.3.2 Operation impacts in 11.2.3.2: "*at the completion of the project, the portal areas could be restored and made available for other uses; they could be surplused and developed by future owners; or permanent odor control, ventilation, and/or tunnel access facilities could be located at the sites.*" "*High quality wetlands, streams, and other sensitive areas will be avoided where possible.*" "*It is not expected that portals would significantly influence the character of surrounding areas or how the surrounding areas would develop in the future.*" "*The majority of portals will be at grade structures that would not be noticeable from surrounding areas. At some locations, permanent odor control, ventilation and/or tunnel access facilities would be constructed. Potential noise and odor impacts would be mitigated through facility design, and facilities would be designed to blend architecturally with surrounding land uses.*"

Comment: When will it be known what and where permanent odor control, ventilation, and/or tunnel access facilities could be located? Without more information on this, as well as whether structures are at grade, partially buried or below grade, all potential impacts cannot be assessed at this time.

C3-131

General Note: "*King County has committed to mitigating identified impacts of Brightwater by providing amenities or incentives to the host jurisdiction and to minimize public costs.*" "*Mitigation 'shall be at least 10 percent of the costs associated with new facilities...'*" Mitigation proposed includes public notice of construction hours, "*utilization of technologically efficient equipment and processes that minimize odors, noise and dust; and notification of impacts to roadways.*" "*King County will work with local jurisdictions to meet or exceed development requirements and minimize potential impacts to surrounding land uses.*" (See Ch. 5, 10, 12, 13 and 16).

Comment: Need specific statement of what the construction hours will be. In addition, no alternative mitigation is proposed.

C3-132

11.3.1 "*King County would implement Best Management Practices during construction and operation of facilities.*"

Comment: Citation of BMPs?

C3-133

11.3.4 "*Portals and any permanent aboveground facilities would be sited to avoid displacing existing land uses when feasible...For facilities sited adjacent to residential areas, King County would work with local jurisdictions to ensure that appropriate buffers and facility design are implemented to minimize impacts .In commercial areas, King County would develop construction traffic plans in accordance with local permits that minimize impacts to local businesses.*"

Comment: Grammar: Permits do not provide a means; perhaps right-of-way permitting procedures do.

GeoEngineers A-9 File No. 0146-093-01

Response to Comment C3-130

Due to additional engineering analysis and design performed after publication of the Draft EIS, the number, size, and location of the permanent odor control, ventilation, and/or tunnel access facilities for each of the system alternatives have been determined and are included in Appendix 3-A, Project Description: Treatment Plant, of the Final EIS.

Response to Comment C3-131

Construction periods could be up to 24 hours per day, 7 days a week, depending upon the stage of project construction and activity. Allowed construction periods would be determined by working with local permitting agencies on a site-by-site basis. Mitigation would be determined by local regulatory requirements.

Response to Comment C3-132

There is no single reference that describes all the BMPs, because they are constantly changing as new technologies or practices are developed and evaluated. A review of the latest construction information would be conducted during the final design phase to determine which technologies or procedures constitute a BMP at that time. Please refer to the Mitigation section in Chapters 4, 5, 6, and 7 of the Final EIS.

Response to Comment C3-133

The text has been corrected in the Final EIS to read: "King County would develop construction traffic plans in accordance with local permitting requirements including street use permits that minimize impacts to local businesses."

CHAPTER 12 – AESTHETICS

C3-134 **General Comment:** The overall language of the DEIS contains language that is not specific and lacks defined commitment to mitigation. Language should be stronger in terms of "adopt" rather than "develop", "will" instead of "may", "will be" versus "probably would be". Be clearer about what is will be done.

12.1.1 Note: "*Guidelines for construction of new, above-ground structures along the conveyance corridors are found in municipal or zoning codes of local jurisdictions.*"… Lake Forest Park and Kenmore "*implement specific design guidelines for the appropriate height, bulk, landscaping, setbacks/buffers, fences, and signage of, or accomodating new structures according to the appropriate zoning designation of the property.*" "*…key evaluative frameworks*" include "*site setting, view corridor and viewpoint*"

12.2.3.1 Note: "*Potential visual impacts would largely be concentrated at portal siting areas,…where surface disruption associated with construction would occur. Short-term aesthetic impacts would occur where conveyance facilities are constructed…*' "*Construction sites could present temporarily significant aesthetic alterations, particularly if portal sites are closely surrounded by residential or commercial development. Aesthetic impacts of below-ground construction could include large pits, piles of soil, site lighting, and construction equipment and removal of existing mature vegetation or structures on the construction site*"

C3-135 Page 12-15: Typo, paragraph 5 – "impact at each site would depend onsite (sic) conditions."

12.2.3.1 Note: "*King County will coordinate with local jurisdictions to develop applicable requirements for the design of construction sites and permanent facilities.*" May include "*building design standards and setbacks; scale, character, and qualities of adjacent and surrounding land use; removal of mature forest, garden, or street vegetation; or disruption of the visual continuity of the streetscape, or area character*"

12.2.3.2 "*There would be minimal long-term aesthetic impacts to surrounding communities*" at portal sites, "*depending on what is removed from the site during construction. Some portals would require access panels set into concrete slabs, which would be visible from the immediate site.*" "*Some portal sites would have permanent above-ground structures. Such …facilities… probably would be located adjacent to, but not within view corridors. Apart from removal of vegetation, and potential structures at these sites, the impacts to the view corridor would be minimal.*" "*Odor control structures are the only common permanent above-ground structures along the conveyance corridors.* [Comment: What about the possible ventilation and tunnel access structures.] *They could be as small as 100 square feet or as large as 1,600 square feet, and would be sited below ground, partially buried, or above ground depending upon site-specified requirements. Such permanent facilities would be designed to blend aesthetically with the surrounding neighborhood*". C3-136

12.3.2.1 Note: Mitigation listed in Section 12.3.2.1: within roadways, fencing during construction; replace affected surface to "*meet or exceed existing conditions*"; at portal areas during construction, leave a buffer of existing vegetation, place fencing or other "*visual barriers to the construction sites.*" Portal facilities would be designed differently, depending on the "*local context.*" Long-term mitigation would include "*landscaping the surface, as appropriate to the specific site.*"

GeoEngineers A-10 File No. 0146-093-01

Response to Comment C3-134

Please refer to the response to the Washington State Department of Natural and Resources, Comment W3-166.

Response to Comment C3-135

Thank you for your comment.

Response to Comment C3-136

The odor control facilities have been revised to include any required ventilation equipment. The revision has been included in the Final EIS. Tunnel access structures would either be buried or at-grade paved areas with a large access hatch.

CHAPTER 13 – LIGHT AND GLARE

C3-137 **General comment:** No site specific studies have been completed at portal sites. These are needed to evaluate impacts and develop appropriate mitigation.

CHAPTER 14 – RECREATION

C3-138 **General comment:** No existing parks are within the portal siting areas located in Lake Forest Park.

14.1.2 "*Where surface construction is needed for pipelines, a 40-foot-wide construction zone would be needed, and this would follow public rights-of-way, when possible. Where a surface structure such as a portal or pump station is proposed in a park or open space area,...impacts could result. At the completion of the conveyance corridor, portals would be between 50 and 90 feet in diameter and could either be located above or below ground. If the structure is located above ground in a recreational area, up to approximately 0.2 acre of the recreational facility could be permanently displaced.*"

C3-139 Comment: What factors will determine whether a structure is below ground or above ground?

14.1.2.1 Note: "*The Burke-Gilman/Sammamish River Trail passes through Portal Siting Area 11, the location of the new pump station, in the City of Kenmore. This popular trail is used for walking, jogging, bicycling and rollerblading*" (Section 14.1.2.1). This trail is a regional trail that extends from Seattle, around the north end of Lake Washington, to Marymoor Park in Redmond.

14.1.2.2 Existing parks, recreation and open spaces listed in Section 14.1.2.2 include the Sammamish River Trail in Portal Siting Area 11, the Sammamish River Trail and Swamp Creek Park in Portal Site Area 34 (both in Kenmore). Linwood Park is located within Portal Siting Area 45 in Kenmore.

14.2.3.1 Note: During construction, "*impacts could include closure of a portion of the park area, loss of parking spaces, detour of trails, and construction-related traffic delays. Depending upon the location of the portal site, temporary impacts associated with traffic, noise, dust and odor from construction activities could affect adjacent recreational areas.*"

14.2.3.1 Note: After construction, "*the sites may be landscaped and restored to pre-construction conditions, or may be converted to new recreational areas minus the area required for any proposed structure. At completion, portals would be between 50 and 90 feet in diameter and could either be located above or below ground.*" "*The siting of portals would attempt to avoid impacts to parks and recreational facilities; however, this may not always be possible*".

C3-140 Page 14-15: Typo, paragraph 1 – "*Bruggers Bog Park in the City of Lake Forest Park falls within this portal siting area.*" This park is not located in Lake Forest Park, although part of the wetlands system associated with Bruggers Bog (headwaters of the west fork of Lyons Creek) is in Lake Forest Park.

GeoEngineers A-11 File No. 0146-093-01

Response to Comment C3-137

The Final EIS text has been revised to include portal sites. Please refer to Chapter 13, Impacts section, for the respective Brightwater System alternatives.

Response to Comment C3-138

Thank you for your comment.

Response to Comment C3-139

Building a structure above or below ground is primarily dependent upon the purpose of the structure. Odor control/ventilation facilities would be above ground while tunnel access facilities would typically be either at-grade or below-grade structures. Chapter 3 of the Final EIS provides a list of such facilities at each of the proposed portals.

Response to Comment C3-140

The Affected Environment section in Chapter 14 of the Final EIS has been revised to indicate that Bruggers Bog Park is within the City of Shoreline.

14.2.3.1 In Portal Siting Area 11, "*if an area within the immediate vicinity of the trail [Sammamish River Trail] were selected for a portal or pump station, detour routes along the trail would be provided and clearly marked during construction. If an area within the trail right-of-way were selected as a portal or pump station site, the trail would be modified to accommodate the structure. Construction of the new Kenmore pump station could take up to 3 years*"

C3-141 Comment: What is the construction period for the portal areas?

14.2.3.1 Also at Portal Siting Areas 10 and 11, "*in addition to the portal construction areas, open cut construction, jack and bore, and/or microtunneling methods, which would cause above-ground disruption, would be required to connect existing wastewater conveyance pipelines to the influent tunnel*".

C3-142 Comment: Routes not shown on figures.

Note: At Portal Siting Area 34, "*a portal in this siting area has the highest potential to affect recreational facilities of all potential portal siting areas considered." Approximately 16 acres of recreational features are included within the 72-acre siting area* [Sammamish River Trail and Swamp Creek Park].

Note: At Portal Siting Area 45 (Kenmore), "*approximately 0.5-acre of Linwood Park falls within the portal siting area. Areas disrupted could include parking areas and lawn/picnic areas…*"

14.2.3.2 "*At the completion of the project, typical portals would occupy up to two acres in size and would be either designed as at-grade slabs, possibly with secured tunnel access facilities, restored to pre-construction conditions, or turned into new recreational areas. Some portals eventually may contain above-ground buildings housing ventilation and/or odor control equipment… Since the exact locations of the air handling facilities at each portal site has not been determined,…discussion represents a worst-case scenario*". Comment:

C3-143 What if odor control fails the nuisance threshold? Additionally, initial impacts may assume no structure, yet "eventually" a structure may be placed. Overall impacts cannot be assessed at this time unless the number and types of structures are known.

14.3.1 Mitigation listed in Section 14.3.1 includes site selection to avoid and/or minimize impacts to recreational facilities when feasible; public notice of construction dates and routes; temporary detour routes for the Burke-Gilman/Sammamish River Trail; incorporate site safety and security measures at construction sites; temporarily move recreational activities; replace a recreational facility at another location of needed; minimize storage of heavy equipment and construction materials on park property; blend permanent facilities with adjacent properties; implement aesthetic controls (landscape buffers and setbacks, noise control dampers and buffers, and odor control facilities); coordinate with recreational service providers.

C3-144 Comment: Should potential alternate sites for displaced recreation be addressed now? Both cities have relatively little vacant land.

14.4.2 "*If taking an existing recreational facility is unavoidable, appropriate compensation would be implemented at the completion of construction.*"

C3-145 Comment: State here who decides the "appropriate compensation."

GeoEngineers A-12 File No. 0146-093-01

Response to Comment C3-141

Construction durations would vary from 1.5 to 4 years at each primary portal, depending on the depth and purpose of the portal. A list of the proposed construction durations for each portal has been included in Chapter 3 and Appendix 3-G, Construction Approach and Schedule, of the Final EIS.

Response to Comment C3-142

Please refer to the response to Comment C3-123 in this letter.

Response to Comment C3-143

The number, location, and size of odor control facilities that would be constructed along the conveyance system are described in Chapter 5 and Appendix 5-B, Odor Analysis: Conveyance, of the Final EIS. All odor control facilities would be constructed at the time of the construction of the conveyance tunnels.

Response to Comment C3-144

Portal screening completed for the Final EIS identified candidate portal sites within each portal siting area. Where possible, the County has tried to avoid recreational facilities; however, the Ballinger Playfield, the North Creek Sportsfields, and Nile Temple Golf Course have been identified as candidate sites where portals could occupy a portion of these recreational facilities. In addition, a portion of a play area associated with Brier Elementary School has been identified as a candidate site. If needed, alternative sites for displaced recreational facilities or areas would be identified once an alternative is selected. Please refer to Chapter 14 of the Final EIS for a discussion of potential impacts and mitigation for affected facilities.

Response to Comment C3-145

Acquisition of any portal site property involve a written offer of "just compensation" from the King County Wastewater Treatment Division (WTD) to the property owner. The value

is determined based on fair market value by an independent real estate appraiser. Each appraisal report is also reviewed by an independent review appraiser to assure that appraisal standards are met. The property owner is given the opportunity to consider and respond to the offer. Once an agreement is reached, the purchase and sale agreements are signed; the property owner is paid when ownership transfers to King County at the close of escrow.

Along the conveyance alignment where King County will be using deep tunneling machines, surface property impacts would be minimal. Nonetheless, King County will be obtaining underground easements. For properties directly above where the tunnel would be located, property owners would receive an offer of "just compensation" from WTD for the determined impacts. The subsurface value is determined by an independent real estate appraiser and is also reviewed by an independent review appraiser. Once an agreement is reached, legal documents (which detail the rights and responsibilities of both parties) are drafted, reviewed, signed, and recorded. After completion, the property owner is paid accordingly. Please refer to the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 and the King County Property Acquisition and Relocation Web site at http://dnr.metrokc.gov/wtd/row/acquisition.htm for more information.

CHAPTER 15 – CULTURAL RESOURCES

15.1.1.3 *"City of Lake Forest Park maintains an inventory of historic buildings and structures but has not passed a historic preservation ordinance." "City of Kenmore has not passed historic preservation ordinances and has not conducted a formal survey of historic buildings and structures."*

C3-146 Comment: The DEIS relied on King County records for Kenmore.

Note: *"Influent portion of the Route 9 corridor generally has high probabilities for hunter-fisher-gatherer, ethnographic period, and historic period archaeological resources because of the proximity of the floodplains to the Sammamish River and other streams and to the north shore of Lake Washington".*

15.1.3.2 Note: Stated in Section 15.1.3.2, *"there are 128 recorded historic buildings and structures along the influent portion of the Route 9 corridors."* Two buildings were evaluated for listing, but are not located within portal siting areas. *"Twelve of the 128 historic buildings [or structures?] are in portal siting areas but none of these buildings or structures have been evaluated for listing in a historic register."*

C3-147

Note: Stated in Section 15.1.3.2, *"there are 31 recorded historic buildings and structures along the 228th Street corridor. Eight of the 31 properties have been evaluated for their eligibility for listing...*[all in Bothell]". *"Thirteen of the 31 inventoried historic buildings are in the portal siting areas…,"* including nine that have not been evaluated for significance.

C3-148

Note: *"Hunter-fisher-gatherers probably fished, hunted, and collected plants on the upper reaches of the small streams that flowed in to the north end of Lake Washington. ...Swamp Creek [was] known and used by the Duwamish, Sammamish, and Snohomish groups".*

Comment: See page 4A-3 of City of Kenmore Comprehensive Plan (delete "probably" from first line). This could be an important element for the National Environmental Policy Act process, specifically as it relates to Section 106.

C3-149

Note: Stated in Section 15.1.3.2, *"there are 32 recorded historic buildings and structures along the 195th Street corridor,"* including four located in portal siting areas. None of these four has been evaluated for significance.

Note: *"Descriptions of buildings observed during the preliminary survey and areas that may require further inventory are provided for the three final conveyance corridors…"* (Section 15.2.1).

Comment: …since there is little preliminary historic building information for Lake Forest Park and Kenmore on which to base a decision at this time. The inventory is needed to adequately evaluate the presence of historic buildings prior to portal site selection.

C3-150

C3-151 15.2.3.1 Question: Does the statement in 15.2.3.1, first paragraph, second sentence contradict Section 15.1.3?

15.2.6 *"King County's commitment to protect and preserve cultural resources where possible would help to diminish adverse effects to cultural resources resulting from constructing and operating the project"*

C3-152 Comment: "Commitment" can be relative.

GeoEngineers A-13 File No. 0146-093-01

Response to Comment C3-146

Please refer to the response to Comment C3-53 in this letter.

Response to Comment C3-147

Chapter 15 of the Final EIS has been revised. The 12 properties referenced do not include any additional structures, other than buildings.

Response to Comment C3-148

Thank you for your comment. Each of the eight buildings referenced is in Bothell.

Response to Comment C3-149

Thank you for your comment. Deletion of "probably" from the text would make the statement inaccurate.

Response to Comment C3-150

Please refer to the response to Comment C3-53 in this letter.

Response to Comment C3-151

The text in Chapter 15 of the Final EIS has been revised. The statements do not contradict; however, the text has been revised to clarify the intent of the statement, and to make distinctions between influent and effluent portions of the conveyance alternatives.

Response to Comment C3-152

Thank you for your comment.

C3-153

15.3.2.2 Note: Mitigation listed in Section 15.3.2.2 includes develop archaeological treatment and monitoring plans; inventory and evaluation of uninventoried and unevaluated historic buildings and structures; monitor construction near historic buildings and structures for ground settling and/or vibration; monitor construction in areas with "high probability for archaeological deposits"; develop a Programmatic Agreement to ensure compliance with Section 106 of the National Historic Preservation Act.

Comment: These all require additional study prior to construction or professional monitoring during construction. Not much preliminary information for Lake Forest Park and Kenmore on which to base a decision at this time. Also, areas with "high probability" based on conclusions in Table 15-6?

15.3.1.1 "*Adverse effects to the archaeological materials would be mitigated through data recovery... mitigation through data recovery may cause construction delays or works stoppages.*" "*If an uninventoried building or structure may be significant, then evaluation of significance would be undertaken prior to moving or demolition. Typical mitigation of adverse effects to eligible historic properties requires photographic and written documentation...prior to moving or demolition of properties*".

C3-154

Comment: Does not address potential environmental issues in the event of moving or demolishing a structure (such as lead-based paint and asbestos-containing building materials).

C3-155

15.3.2.3 Note: Portal Siting Areas that would require additional field reconnaissance in Lake Forest Park and Kenmore are 10, 11, 34, 44 and 45. Also, unevaluated historic buildings would be evaluated in Portal Siting Areas 34 and 45.

GeoEngineers A-14 File No. 0146-093-01

Response to Comment C3-153

King County and the Washington State Department of Transportation have conducted historic building surveys in Kenmore as described in the response to Lake Forest Park, Comment C4-48. King County and Lake Forest Park conducted historic building surveys in Lake Forest Park in 1977-78 and 1996, respectively. Previous survey efforts were supplemented through inventory and evaluation of portal siting areas and treatment plant sites in support of the Final EIS. The inventory of historic buildings in support of the Final EIS identified a cluster of buildings, known as the Twin Creeks Riding Stable, in Portal Siting Area 44. The King County Historic Preservation Program determined the Twin Creeks Riding Stable to be ineligible for listing in the National Register of Historic Places (NRHP), Washington Heritage Register (WHR), or King County Landmarks List (KCLL). Further discussion of the Twin Creeks Riding Stable is included in Appendix 15-A, Cultural Resources: Historic Buildings and Structures, of the Final EIS.

Studies conducted for the Final EIS and archaeological fieldwork conducted during the design and predesign phase have provided data for development of treatment and monitoring plans and a programmatic agreement.

High-probability areas for archaeological resources have been based on conclusions presented in tables in Chapter 15 of the Final EIS.

Response to Comment C3-154

Prior to demolition of structures on treatment plant or candidate portal sites, a licensed abatement company would remove any materials containing asbestos or lead in accordance with Washington Industrial Safety and Health Act (WISHA) requirements. Disposal of hazardous materials would be at licensed sites and would be thoroughly documented. Abatement activities are expected to be minimal and would be completed by small crews of certified workers

as needed. No significant site impacts are anticipated during abatement activities. Please refer to Appendix 3-G, Construction Approach and Schedule, of the Final EIS for additional information.

Response to Comment C3-155

Please refer to the response to Comment C3-53 in this letter.

ATTACHMENT B

City of Lake Forest Park Comprehensive Plan, Revised Draft dated November 21, 2002

The following includes portions of the Comp. Plan that are applicable to the following DEIS elements: environmental health, land and shoreline use, aesthetics, recreation and cultural resources. In a general sense, the City of Lake Forest Park concern for existing vegetation (size and type), the limited area where services are located (primarily in Lake Forest Park Shopping Center – a portion of which is located within Portal Siting Area 10) and need to not lose any residential or commercial space) are the most obvious conflicts with siting any of the aboveground Brightwater facilities within Kenmore. Construction of Portal Siting Area 10 is likely to be disruptive of the service core and city administrative activities in the City of Lake Forest Park (for about two years?).

- Page 15: "The community is known by the high degree of visibility of its mature Douglas firs, hemlocks and maples. In addition, numerous homes have mature fruit trees dotting their landscapes."
- Page 16: "The community has limited service industries, many of which are located in the Lake Forest Park Shopping Center."
- Vision Statement No. 6: "Lake Forest Park values high standards for public and private development. The City will encourage development that minimizes impact to the environment and urban design that is in harmony with natural and neighborhood surroundings" (page 17).
- Vision Statement No. 7: "Lake Forest Park values regional solutions to regional issues. The City will work together with surrounding jurisdictions to further our shared local and regional interests while maintaining the autonomy to advance local interests on behalf of its citizenry" (page 17).
- The Comprehensive Plan is based several major findings, including the following: "Lake Forest Park residents want the city to retain its forest-like character; and new development needs to be sensitive to the existing single-family character of the community and Lake Forest Park's sensitive areas such as wetlands, shorelines, steep slope and landslide hazard areas and streams" (page 18).
- There are 136 vacant acres in the city; after subtracting for sensitive areas and market factors, there are 61 vacant acres (page 22).
- In the Comp Plan, the second Town Center alternative would include the expansion of the Town Center concept to create an urban village, and would include the existing Town Center and property directly to the west: increased density and housing opportunities would result. (page 22). Question: We understand that this option is still under consideration. Impacts to an urban village from construction/operation of Portal Siting Area 10 and any permanent structures within the portal siting area should be considered.
- "Multi-family dwelling units are generally mid-scale apartment complexes with two to five stories and low rise condominiums" (page 24).
- "…there is virtually no capacity for additional commercial development within the city, unless it is achieved through redevelopment of existing commercial properties or changes to the future land use and zoning maps" (page 30).

- "Further residential development is limited to infill and redevelopment and will be the primary methods used to achieve the City's housing goals" (page 30).
- One of city zones is "public facility" which includes wastewater facilities (page 34).
- Pol LU 1.5: "Preserve and display its rich history by implementing ordinances, interlocal agreements and administrative procedures to assure identification, protection and preservation of historic landmarks, landmark sites and districts. Landmark designation, with appropriate inclusion in the county, state and federal registers of historic places, is encouraged" (page 34).
- Pol LU 2.6: "...land use regulations..include performance standards for the following: a) signage and lighting which is compatible with adjacent land uses; b) open space...; c) setback lines; d) landscaping; e) building height and bulk; f) impact on adjacent properties; g) streetscape improvements; h) parking lot landscaping and configuration; i) bicycle lanes; and j) sidewalk width" (page 36).
- Pol LU 2.7: "Enhance vitality and visual interest of mixed use, commercial, business and other areas by providing incentives for the inclusion of open space, water features, public art, planters, courtyards and other public amenities" (page 36).
- Goal LU 4: "Encourage the development of the Town Center as the City's commercial core, oriented between a mix of commercial and potential residential uses and pedestrian linkages between uses" (page 37).
- Policy LU 4.7: "Development at the Town Center should be consistent with the character of Lake Forest Park...development aspects that will be reviewed shall include building façade articulation, entries, landscaping, buildings, pedestrian amenities, and building height" (page 37).
- Goal LU 5: "Balance the need to provide an adequate amount of land for housing with the desire to maintain the City's forested, residential character and unique natural sensitive areas,...utilities..." (page 37).
- "Protection of remaining wetlands function and conditions is necessary and restoration should be encouraged when where (sic) feasible" (page 40).
- "Because part of the City relies on ground water as its source of potable water, protection of the aquifer is particularly important" (page 42).
- No shorelines of the state in Lake Forest Park except Lake Washington (page 43).
- Ecological goals, including streams, wetlands, water, air and vegetation stated on p. 46-50. Including Pol EQ 6.3: "Define, identify and protect significant trees and other vegetation within Lake Forest Park" (page 50).
- "Special needs housing is a unique requirement for the City to address. Special needs housing includes senior housing and group homes...approximately one-third of the city's residents will be over 65 in the next twenty years and may desire to live in more affordable, lower maintenance residences...should also be located near service provides (sic), such as shopping and medical and dental offices.." (page 58).
- Pol HS 5.2: "...Ensure that residential neighborhoods and developments are adequately buffered from noise, odors, traffic and other environmental stresses of development" (page 62).
- Pol ED 5.3: "Locate public facilities and programs in Town Center" (page 68).

- Pol ED 6.2: "Improve visual appearance of all commercial development with landscaping, art, maintenance and design" (page 68).
- Pol ED 6.3: "Promote diversity of commercial development, civic and cultural uses at Town Center" (page 68).
- "Lake Forest Park has its own police force serving the city…station is currently located at City Hall at the Lake Forest Park Town Center" (page 88).
- Pol EF 1.2: "Establish a process for reviewing proposals for siting essential public facilities..include requirements that siting of proposed public facilities be reviewed for compatibility with adjacent land uses and those land uses designated on the future land use map, particularly residential neighborhoods and city centers…The City's siting process may include requirements that facilities provide amenities or incentives to the neighborhood as a condition of approval" (page 97).
- Pol UT 4.2: "Construction, operation and maintenance of utility structures and improvements should be consistent with resource conservation and best management practices according the to the Washington Department of Ecology" (page 116).
- Pol UT 4.5: "Where possible, require joint use of transportation rights-of-way and utility corridors" (page 116).
- Surface water management goals on p. 116- 117, including TESC.
- City of Lake Forest Park Wetlands and Landslide Areas Map: landslide hazard area and wetlands in Portal Siting Area 7. Lyon Creek flows through Portal Siting Area 10.

Lake Forest Park Municipal Code: Title 16, Environmental Protection (revised 06/02):
Codes likely applicable to the proposal:

16.06: State Environmental Act Implementation
16.08: Land Clearing and Grading
16.14: Tree Protection and Replacement
16.16: Environmentally Sensitive Areas
16.18: Development Standards in Environmentally Sensitive Areas, includes exemptions
16.24: Drainage Plans
16.26: Land Use Decisions Procedures

City of Kenmore Comprehensive Plan dated March 2001

The following includes portions of the Comp. Plan that are applicable to the following DEIS elements: environmental health, land and shoreline use, aesthetics, recreation and cultural resources. In a general sense, the City of Kenmore vision for parks/open space/natural environment elements to remain unchanged is the most obvious conflict with siting any of the aboveground Brightwater facilities within Kenmore.

- 20-year vision: "parks/open space/natural environment would be the primary feature that respondents hope never change" (page 2-4).

- The vision statement includes the following: "a community that actively protects natural and environmentally sensitive areas, significant open space, and trees; a community with a network of parks, trails, open spaces, and recreational facilities providing for passive and active recreation, and waterfront access" (page 2-7).
- Page 4A-3: "numerous arrowheads were found by early settlers at the mouth of the Sammamish River along Lake Washington." And "along Lake Washington and the mouth of the Sammamish River are 'areas known to contain large numbers of sites.'" And "it's possible that there are unknown archaeological sites in Kenmore due to its lake and river frontage and low elevations."
- "A relatively small portion (9 percent) of the City's land is vacant. Although some land is vacant due to property owner preferences, some is likely vacant due to environmental constraints such as wetlands, flood hazards, or steep slopes" (page 4A-11).
- Question: Where is the Downtown – Community Special District? And Downtown – Master Plan Development Special District? (page 4A-18). Will it be impacted?
- LU-2.3.7 – Sponsor a study of the Swamp Creek area wetland, stream corridor, and associated habitat? (page 4A-22).
- Objective 3.2: "Promote the preservation of significant historic and archaeological sites and structures." (page 4A-25).
- We understand that the LakePointe development discussed in Section 4B-1 currently is on hold. The development is located along the influent corridor, but not within a portal siting area. As planned before, the project includes over 650,000 square feet of commercial/office/hotel development and 1,200 housing units (page 4B-1). If the project goes forward during Brightwater facilities construction, there will be a combined impact to the City of Kenmore from both large projects.
- Policy LU-7.1.5: "Provide appropriate resources towards building and zoning code enforcement to help ensure sufficient structure and site quality and maintenance" (page 4C-2). Comment: DEIS does not address structure and site long-term maintenance.
- Objective 10.1: "Protect natural and environmentally sensitive areas, open space, trees, vegetation, natural terrain, and drainage" (page 4C-5).
- Policy LU-10.1.5: "Promote preservation of existing and provision of new view corridors, consistent with the Parks, Recreation, and Open Space Element, particularly Objectives 39.4 and 39.5 and their associated policies" (page 4C-6).
- Policy LU-10.2.1: "Continue to require tree retention plans for development and redevelopment proposals in Kenmore" (page 4C-6).
- Policy LU-10.2.3: "Require development to retain substantial trees and include substantial landscape materials to achieve noticeable biomass" (page 4C-6).
- Note: Swamp Creek is a Class 1 stream (with a 100-foot buffer) (page 4D-6 and 4E-1).
- Objective 13.5: "Adopt an urban forestry strategy to encourage the preservation and planting of trees on public and private property" (page 4D-20).
- Policy LU-13.6.2: "Allow development within designated Shoreline Environments that preserves the resources and ecology of the water and shorelines, avoids natural hazards, promotes visual

and physical access to the water and preserves archeological resources, traditional cultural resources, and navigation rights" (page 4D-21).

- Policy LU-14.2.1: "Require land uses permitted in mapped Erosion Hazard Areas to minimize soil disturbance and maximize retention and replacement of native vegetative cover" (page 4D-21). Comment: erosion hazards areas within Portal Siting Areas 7, 10 and 44.
- Policy LU-14.2.2: "Require new development to protect natural vegetation coverage at levels sufficient to moderate surface water runoff and erosion and to protect the integrity of stream channels. When revegetation is required, appropriate native vegetation should be used" (page 4D-21).
- Policy LU-14.2.3: "Require grading and construction activities to be conducted with erosion control Best Management Practices and other development controls as necessary to reduce sediment discharge from construction sites to minimal levels" (page 4D-21).
- Note: Kenmore uses the King County Shoreline Master Program (on an interim basis). Applies to Class 1 streams and other State shorelines. In Kenmore, includes Lake Washington, Sammamish River, and Swamp Creek, plus associated wetlands (page 4E-1). The shorelines, as indicated in the DEIS figure 11-29, are Urban designations.
- Objective 16.7: "Unique and fragile areas of the shoreline should be protected from uses or activities that will have an adverse effect on the land or water environment" (page 4E-4). Question: Are these delineated?
- Objective 16.8: "Non-residential uses or activities which are not shoreline dependent should be encouraged to locate or relocate away from the shoreline" (page 4E-4).
- Policy LU-18.6.2: "New developments should minimize visual and physical obstruction of the water from shoreline roads and upland owners" (page 4E-7).
- Policy LU-19.1.1: "Unique and fragile areas in shoreline areas should be designated and retained as open space. Access and use should be restricted or prohibited when necessary for their preservation" (page 4E-8). Question: Are these delineated?
- Objective 19.4: "Scenic, aesthetic and ecological qualities of natural and developed shorelines should be recognized and preserved as valuable resources" (page 4E-8).
- Policy LU-19.4.2: "In shoreline areas, the natural topography should not be substantially altered" (page 4E-9).
- Policy LU-19.4.3: "Shoreline structures should be sited and designated to minimize view obstruction and should be visually compatible with the shoreline character" (page 4E-9).
- Policy LU-19.5.4: "Any structure or activity in or near the water should be constructed in such a way that it will minimize adverse physical or chemical effects on water quality, vegetation, fish, shellfish or wildlife" (page 4E-9).
- Objective 21.1, including Policy LU-21.1.1 and LU-21.1.3 through LU-21.1.5: "Public and private cooperation in site preservation and protection should be encouraged" (page 4E-11).
- Objective 21.4, including Policy LU-21.4.1 through LU-21-4.3: "the need to provide clear interpretation of historic/cultural sites to visitors should be recognized" (page 4E-12). Comment: Not addressed in DEIS.

- Policy LU-24.1.2: "…Uses which are neither shoreline dependent or water oriented should be discouraged except for residential" (page 4E-15).
- Policy LU-24.1.3: "Emphasis should be given to developing visual and physical access to the shoreline in the Urban Environment."
- Policy LU-24.1.7: "Aesthetic considerations should be actively promoted by means of sign control regulations, architectural design standards, planned unit development standards, landscaping requirements and other such means" (page 4E-15).
- Policy LU-24.2.8: "Development should not significantly degrade the quality of the environment, including water quality and air quality, nor create conditions which would accentuate erosion, drainage problems or other adverse impacts on adjacent Environments" (page 4E-16).
- Policy LU-24.12.4: "King County should be consulted prior to or at the time of application for construction of regional utility facilities to be located in or along shorelines or wetlands" (page 4E-21).
- Policy LU-24.12.5: "Utility corridors crossing shorelines of the state should be encouraged to consolidate and concentrate or share right-of-way…" (page 4E-22).
- Policy LU-24.12.6: "Public access consistent with public safety and security should be encouraged where rights-of-way for regional utility facilities cross shorelines of the state" (page 4E-22).
- Policy LU-24.12.7: "New utility facilities should be located so as neither to require extensive shoreline protection nor to restrict water flow, circulation or navigation" (page 4E-22).
- Policy LU-24.12.8: "Utility facilities and rights-of-way should be selected to preserve the natural landscape and minimize conflicts with present and planned used of the land on which they are located" (page 4E-22).
- Policy LU-24.12.9: "New utility routes should be designed to minimize detrimental visual impact from the water and adjacent uplands" (page 4E-22).
- Proposed improvement to Linwood Park provided on page 7-3 and page 7-14.
- Proposed improvement to Swamp Creek Park provided on page 7-5.
- Policy P-39.5.1: "Retain view corridors in existing rights of way, recreational areas and regional trail corridors…by requiring adjacent new developments to provide visual access" (page 7-18).
- Page 10-10 addresses the Regional Wastewater Comprehensive Plan.
- Policy U-48.1.8: "Through memorandums of understanding or other methods, ensure the implementation of the County's Regional Wastewater Comprehensive Plan results in full mitigation of siting, construction, and operational impacts of new or expanded facilities in Kenmore" (page 10-13).
- Policy U-48.1.11: "Ensure the implementation of the County's Regional Wastewater Comprehensive Plan …minimize failures, overflows, and contamination affecting the City's surface waters" (page 10-13).

MEMORANDUM

To:	Chuck Price ECG, Inc.	Date:	January 11, 2003
From:	Milton Lim	TG:	02353.00
Subject:	Brightwater DEIS – Transportation Section Comments		

This memorandum summarizes our review of the Brightwater Wastewater Treatment project DEIS. The review focuses on potential impacts to transportation facilities in the cities of Kenmore and Lake Forest Park.

Construction Schedule

The duration of construction activity at each tunnel portal location would range from two to five years (DEIS page 3-29, Table 3-5). The following measures may need to be considered in order to account for the relatively long construction period:

C3-156

- A mitigation measure identified in the DEIS states that streets impacted by construction will be restored to pre-existing or better conditions (DEIS page 16-54). Due to the long multi-year construction period, the need to restore streets may need to be evaluated and implemented periodically during the construction period.

C3-157

- As a temporary condition that would occur only during construction, the anticipated construction truck volumes at the portal sites of 48 truck trips per day (DEIS page 16-37 Table 16-16) may not typically warrant any mitigation. However, due to Brightwater's long construction period, measures to mitigate truck access during construction may be necessary, particularly for local non-arterial streets which are not generally designed to accommodate significant truck volumes over a longer period of time. Such measures may include strengthened pavement to accommodate the truck weights and additional pavement widths to accommodate larger turning radius requirements.

Construction Portal Locations

C3-158

- The DEIS indicates that access routes for construction of the portals would generally follow existing interstates, state routes, and major arterials (DEIS page 16-44). It should be noted that the 195th Corridor Alternative has two portal sites, 44 and 45, that are located away from the major arterial street

The Transpo Croup page 1

Response to Comment C3-156

The schedule for restoring impacted streets to pre-existing or better conditions would be included in the traffic management plan (TMP). Please refer to the response to Comment C3-16 in this letter.

Response to Comment C3-157

Strengthened pavement and additional pavement widths could be included in mitigation measures developed as part of the traffic management plan (TMP). Please refer to the response to Comment C3-16 in this letter.

Response to Comment C3-158

Portal 45 is a secondary portal with few truck trips expected to travel on 61st Avenue NE since major construction activities would be concentrated at the primary portals. The secondary portals, if required, would generate an average of three trucks per day and would create minimal impact to the peak-hour traffic operations. Portal 44 is a primary portal that would be expected to create traffic impacts. As such, a detailed analysis with traffic impacts and mitigation measures are provided for 80th Avenue NE. Please refer to Appendix 16-B, Transportation Impacts: Plant Sites and Conveyance, of the Final EIS for greater detail. Please refer to the response to Comment C3-16 in this letter.

C3-158

network. Access to these portal sites during construction will add significant truck traffic to 61st Avenue and 80th Avenue. Mitigation measures may be needed to accommodate the added truck traffic on these streets, which currently do not function as primary truck routes.

C3-159

- Specific locations for the tunnel portals have not yet been identified. Locations for the tunnel portals are identified in the DEIS as 2,000-foot diameter (72 acres) areas within which 1 to 2 acres would be selected as the actual site for the portal (DEIS page 3-11). When the actual portal sites are determined, additional analysis should be conducted to identify impacts to the adjacent street system. If the portals are located adjacent to local non-arterial streets, improvements may be required to accommodate truck access for construction.

C3-160

Open Cut Construction

Open cut construction methods would be used in construction of the conveyance system for special crossings, to connect the new tunnel with existing pipes, and to relocate existing utilities along the conveyance corridors. The DEIS notes that the typical lengths of the open cut segments would vary from several hundred to 2,000 feet (DEIS page 3-29 Table 3-5). As a result, the open cut trenches could potentially impact significant lengths of roadway and property along the conveyance corridors. Measures required to mitigate the impacts could include:

- Measures to maintain vehicular and pedestrian access to and from adjacent properties during construction.
- Limiting lengths of open cuts.
- Phasing and sequencing construction to avoid or minimize concurrent lane or road closures on multiple streets.

The Transpo Group page 2

Response to Comment C3-159

Improvements to local non-arterial streets could be included in mitigation measures developed as part of the traffic management plan (TMP). Please refer to the response to Comment C3-16 in this letter.

Response to Comment C3-160

While open-cut construction may be used for the installation of pipes connecting the existing system to the influent tunnel and for utility relocation, it would not be feasible where the corridor crosses railroads, major streets and intersections, freeways, wetlands, streams, and areas of unstable soils or high groundwater levels. For these crossings, either microtunneling or bore and jack construction would be used to minimize or eliminate impacts to these areas. The open-cut construction method is typically used where the pipeline depth is less than 30 feet. Typical lengths of open-cut segments may vary from several hundred to 2,000 feet, but only 100 feet could be constructed in a day. It would be unlikely that any length over 100 feet would be under construction at any given time. Therefore, the potential for significant lengths of roadway and property being impacted would be minimal.

The locations of open-cut construction would not be known until final design is complete because exact conveyance system alignments and pipeline locations would have to be determined first. When the locations of open-cut construction are known then mitigation measures would be identified and approved through the local permitting process.

King County agrees that the described measures are potential mitigation measures and will work with all affected communities in implementing the appropriate measures.

Economic & Fiscal Impacts of the Proposed Brightwater Wastewater Treatment System on the Cities of Kenmore and Lake Forest Park

Prepared for:

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January 13, 2003
January 16, 2003 (revised)

Economic & Fiscal Impacts of the Proposed Brightwater Wastewater Treatment System on the Cities of Kenmore and Lake Forest Park

Executive Summary

- King County is proposing to build a new wastewater treatment system, called Brightwater, to meet the region's long-term wastewater treatment needs. The Brightwater system would include a secondary wastewater treatment plant; the associated pipelines, pump stations, and other facilities that make up a conveyance system to transport wastewater to and from the plant; and an outfall to discharge effluent into Puget Sound.

- The treatment facility would provide additional capacity in 2010 to treat 36 million gallons per day (mgd) of wastewater. It would also produce biosolids for application on forestry and agricultural lands as well as highly treated water for non-drinking uses, such as landscape irrigation. Construction of the Brightwater system is scheduled to begin as early as 2004 and be completed with the system online in 2010.

- The preferred alternative site for the Brightwater secondary wastewater treatment plant (WWTP) is along State Route 9 in unincorporated Snohomish County, just north of the city limits of Woodinville. The associated preferred conveyance corridor includes both an influent pipeline extending from existing pipelines in Lake Forest Park, Kenmore and Bothell to the treatment plant site; and an effluent pipeline from the treatment plant site to an outfall in Puget Sound.

- The influent pipeline would follow a corridor of 7.8 miles from the intersection of Ballinger Way NE and NE 178th Street in Lake Forest Park, along Bothell Way NE near the northern end of Lake Washington to the intersection with NE 83rd Street before heading northeast through Bothell into Snohomish County to the treatment plant. The proposed influent pipeline traverses Lake Forest Park and Kenmore for a distance of 0.75 miles and 2.88 miles respectively.

- The effluent pipeline would follow a corridor of 12.5 miles that extends from the treatment plant to NE 195th Street, traversing the Cities of Kenmore and Lake Forest Park to Ballinger Way NE (State Route 104). At this intersection, the corridor turns northwest along Ballinger Way NE to NE 205th Street in Shoreline before heading into the Puget Sound. The effluent pipeline traverses Kenmore and Lake Forest Park for a distance of 2.88 miles and 1.5 miles respectively.

- The purpose of this study is to present results of an economic and fiscal impact analysis of the Brightwater conveyance system for two jurisdictions—City of Kenmore and City of Lake Forest Park.

- Construction of the conveyance system—both tunnels and portals—has potentially significant economic and fiscal implications for the Cities of Kenmore and Lake Forest Park. In particular, the study poses this principal question: what is the stream of revenues and economic effects of constructing and operating the Brightwater wastewater treatment conveyance system within the Cities of Kenmore and Lake Forest Park? Related, are there any associated deleterious impacts on existing business activity and residences within the conveyance system?

- This study is not a complete fiscal impact analysis. Rather, it is limited to considering major tax revenues generated from direct construction-related activities, namely revenues generated from direct construction outlays. The revenue sources considered by the analysis consist of the property tax, sales and use tax, and real estate excise tax, and utility tax. Since the study is limited to an evaluation of revenues directly associated with construction of the conveyance system, the other major component of a fiscal study, namely costs or expenditures is not presented here.

- In addition, the study presents findings on the economic effects—employment and earnings—of only the construction of the conveyance system. Construction of the Brightwater wastewater conveyance system will have "ripple" effects throughout the regional economy and within the Cities of Kenmore and Lake Forest Park. Operation of the conveyance system is expected not to have any significant effects.

Recent History of Revenues in the City of Kenmore and the City of Lake Forest Park

- Like most municipalities in the state, the Cities of Kenmore and Lake Forest Park derive a large share of its revenues from the property tax and sales tax. Local revenues dominate both Cities' general funds, with intergovernment sources declining precipitously between 2000 and 2003.

- For the City of Kenmore, property tax is the dominant revenue source for its general fund of $7.2 million (proposed 2003 budget, operating revenue), followed by utility tax and sales tax. The property tax is expected to contribute $2.71 million or 38 percent to the City's general fund in 2003. Sales tax is expected to contribute $1.05 million or 14.5 percent of the City's total operating revenue.

- In the City of Lake Forest Park, property tax accounts for 50 percent of general fund revenues, followed by sales tax and utility tax. The property tax is expected to contribute $2.46 million of its total $4.93 million operating revenue for 2003. Sales tax is expected to contribute $490,000 or 10 percent of the City's total operating revenue.

Proposed Brightwater Wastewater Treatment Conveyance System—Project Description and Construction

- The 195th Street conveyance system for the preferred Brightwater plant site consist of a number of components:
  1. An influent pipeline for carrying untreated wastewater to the plant;
  2. An effluent pipeline for carrying treated wastewater from the plant;
  3. A pump station to lift the wastewater to higher elevations so that it can continue to flow by gravity (depending on the alternative selected);
  4. Portals to provide access for tunneling equipment during pipeline construction and for pipeline maintenance after construction; and
  5. An outfall pipeline in Puget Sound with a diffuser at the end to mix the treated wastewater with water currents in the Sound.

- These conveyance tunnels will be placed within a 1,000-foot-wide corridor of land whereas portal siting areas are 72-acre (2,000-foot-diameter) areas within which 1-2 acres would be selected for construction of the portals. Portals will serve as staging areas and access points for tunnel construction. Six of the total ten portals on the preferred influent and effluent pipeline corridors are located within the City limits of Lake Forest Park (2 portals) and Kenmore (4 portals).

- The total construction cost for the conveyance system alone (assuming the Force Main/Gravity Tunnel, the preferred system) is estimated at $728 million in 2002 dollars, (*Brightwater Treatment System, Cost Estimates for the Brightwater Systems, Information Handout, November 16, 2002*). These cost outlays have in turn been distributed over the 2005-2008 timeframe of construction of the conveyance system.

- Construction labor along the conveyance system is estimated at a level of 360 workers during the peak construction period. Truck drivers would add an additional 50 – 60 workers. Combined, the total peak construction workforce is estimated at 410 – 420 workers. These workers will be engaged along the entire conveyance system, 40 percent of which lies within the City of Lake Forest Park and the City of Kenmore.

Economic and Fiscal (Revenue) Impacts Associated with the Brightwater Conveyance System

- The primary focus of the analysis of economic impacts related to the Brightwater conveyance system is on the employment and earnings generated during the construction phase. It is expected that there will be minimal economic effects once the conveyance system becomes fully-operational. Employment here is measured in terms of full-time-equivalents for construction.

- Several worker categories including construction workers, machinery and equipment installation workers, and architectural, engineering, and administrative (A/E&A) workers are included in the direct worker totals.

- Peak year employment in 2006 was estimated at 214 workers of whom about 70 percent are in construction occupations. These workers have an estimated average annual salary of $55,100. Construction of the conveyance system during the 2005-2008 time period is expected to result in additional employment of upwards of 200 workers within the region. In other words, for every construction worker on the conveyance system there is another 0.92 workers hired in other businesses within the region.

- Given the existing mix of businesses and the commutation patterns of heavy construction workers, few businesses will gain from the increased construction activity within the two Cities. Only a modicum of direct construction workers is expected to reside within the two Cities. The current base of economic activity within Kenmore and Lake Forest Park suggest that most purchases of needed supplies and materials for construction will be made outside of the immediate Cities.

- Constructing the conveyance system will require millions of dollars worth of materials and supplies. Only a modest amount of these materials and supplies will be purchased from local vendors located within the Cities of Kenmore and Lake Forest Park. The expected increase in sales tax revenues for these two cities is listed in the below table. Over the four-year period, the expected increase in sales tax collections for these two Cities is estimated at be less than $50,000 in 2002 dollars.

Sales Tax Revenues due to Brightwater Conveyance System Construction, 2005-2008

City	*2005*	*2006*	*2007*	*2008*	*Cumulative Total*
Lake Forest Park	$1,800	$2,100	$1,600	$1,200	$6,700
Kenmore	$11,300	$13,300	$10,100	$7,900	$42,600
Total, combined Cities	$13,100	$15,400	$11,700	$9,100	$49,300

With the exception of two portal staging areas, most of the portals have been sited within areas of residential property or open space. The exceptions are the influent portals #10 (located at the intersection of Ballinger Way NE and NE 178th Street) and #11 (located at the intersection of Bothell Way NE and NE 66th Street). Both of these areas encompass major shopping districts in Lake Forest Park and Kenmore. Obviously, the specific final location for these portals could adversely affect existing retail trade and service establishments within Kenmore and Lake Forest Park. In order to minimize adverse economic impacts, planners will need to locate the staging areas for these two portals away from these major shopping districts. Increased truck traffic associated with these two portals may be associated with a decline in shopping trips to these retail districts. However, given the imprecise location of these staging areas, potential economic impacts can not be quantified.

Economic & Fiscal Impacts of the Proposed Brightwater Wastewater Treatment System on the Cities of Kenmore and Lake Forest Park

Introduction

King County is proposing to build a new wastewater treatment system, called Brightwater, to meet the region's long-term wastewater treatment needs. The Brightwater system would include a secondary wastewater treatment plant; the associated pipelines, pump stations, and other facilities that make up a conveyance system to transport wastewater to and from the plant; and an outfall to discharge effluent into Puget Sound. The treatment facility would provide additional capacity in 2010 to treat 36 million gallons per day (mgd) of wastewater. It would also produce biosolids for application on forestry and agricultural lands as well as highly treated water for non-drinking uses, such as landscape irrigation. Construction of the Brightwater system is scheduled to begin as early as 2004 and be completed with the system online in 2010.

The preferred alternative site for the Brightwater secondary wastewater treatment plant (WWTP) is along State Route 9 in unincorporated Snohomish County, just north of the city limits of Woodinville. The associated preferred conveyance corridor includes both an influent pipeline extending from existing pipelines in Lake Forest Park, Kenmore and Bothell to the treatment plant site; and an effluent pipeline from the treatment plant site to an outfall in Puget Sound. The effluent pipeline would follow a corridor that extends from the treatment plant to NE 195th Street, traversing the Cities of Kenmore and Lake Forest Park to Ballinger Way NE (State Route 104). At this intersection, the corridor turns northwest along Ballinger Way NE to NE 205th Street in Shoreline before heading into the Puget Sound.

Study Purpose and Scope

The purpose of this study is to present results of an economic and fiscal impact analysis of the Brightwater conveyance system for two jurisdictions—City of Kenmore and City of Lake Forest Park. Construction of the conveyance system—both tunnels and portals—has potentially significant economic and fiscal implications for the Cities of Kenmore and Lake Forest Park. In particular, the study poses this principal question: what is the stream of revenues and economic effects of constructing and operating the Brightwater wastewater treatment conveyance system within the Cities of Kenmore and Lake Forest Park? Related, are there any associated deleterious impacts on existing business activity and residences within the conveyance system?

This study is not a complete fiscal impact analysis. Rather, it is limited to considering major tax revenues generated from direct construction-related activities, namely revenues generated from direct construction outlays. The revenue sources considered by the analysis consist of the property tax, sales and use tax, and real estate excise tax, and utility tax. Since the study is limited to an evaluation of revenues directly associated with construction of the conveyance system, the other major component of a fiscal study, namely costs or expenditures is not presented here. In addition, the study presents findings on the economic effects—employment

and earnings—of only the construction of the conveyance system. Construction of the Brightwater wastewater conveyance system will have "ripple" effects throughout the regional economy and within the Cities of Kenmore and Lake Forest Park.

Recent History of Revenues in the City of Kenmore and City of Lake Forest Park

Like most municipalities in the state, the Cities of Kenmore and Lake Forest Park derive a large share of its revenues from the property tax and sales tax. Tables 1 and 2 indicate revenues by source generated by the City of Kenmore and the City of Lake Forest Park for the years 2000 through 2002 and projected (or proposed) for 2003.

Table 1. City of Kenmore Historical Revenues, General Fund 2000-2003 (current dollars)

Revenue by Source 2000-2003	*FY 2000 Actual*	*FY 2001 Actual*	*FY 2002 Revised*	*FY 2003 Proposed*
Local sources				
Property tax	$2,326,168	$2,577,510	$2,632,530	$2,709,430
Sales tax	$949,316	$1,149,678	$1,045,000	$1,045,000
Criminal justice 1/10 sales tax	$361,688	$369,720	$358,000	$358,000
Utility tax	$879,836	$988,519	$1,065,000	$1,140,500
Gambling tax	$583,242	$572,535	$600,300	$600,300
Other taxes	$767,189	$3,000	$2,600	$2,600
Cable franchise fees	$142,911	$104,192	$137,000	$151,200
Building permits	$80,420	$198,327	$247,000	$259,250
Other licenses and permits	$5,793	$17,112	$4,500	$4,500
Land use fees-residential	$388,880	$184,466	$170,200	$178,710
Land use fees-commercial	$141,723	$296,648	$210,000	$310,000
Preapplication fees	$16,306	$10,607	$6,000	$6,000
Plan review fees	$41,155	$76,500	$98,000	$102,900
Other charges for services	$118,456	$195,668	$73,200	$70,000
Subtotal, local sources	**$6,803,083**	**$6,744,482**	**$6,649,330**	**$6,938,390**
Intergovernmental sources				
State grants	$76,980	$44,650	$57,960	$55,700
Recycling grants	$43,826	$43,260	$58,000	$58,000
Motor vehicle excise tax	$45,215	$0	$0	$0
Equilization allocations	$780,445	$0	$0	$0
Liquor excise tax	$56,098	$61,675	$63,000	$67,320
Liquor board profits	$104,188	$98,813	$100,000	$96,480
Other intergovernment revenues	$7,306	$6,080	$6,450	$6,300
Subtotal, intergovernment sources	**$1,114,058**	**$254,478**	**$285,410**	**$283,800**
Total operating revenues	**$7,917,141**	**$6,998,960**	**$6,934,740**	**$7,222,190**
Beginning fund balance	$2,376,691	$4,291,486	$6,787,820	$2,497,460
Interest & interfund transactions	$292,136	$1,379,060	$1,424,200	$511,250
Total available revenues	**$10,585,968**	**$12,669,506**	**$15,146,760**	**$10,230,900**
Per capita	$567	$674	$790	
Population	18,678	18,790	19,180	Not available

Sources: City of Kenmore, Finance Department; Washington State Office of Financial Management (population).

Revenues presented here are from only the Cities' General Fund; other funds—Special Funds (such as Street Fund and Drainage Utility Fund), Debt Service Fund, and Capital Funds are not included. As shown in the tables, local revenues dominate total general revenues by source (excluding beginning fund balances and interest earnings). The pattern has not changed significantly since 2000, even though intergovernmental revenues have precipitously declined during the period.

Table 2. City of Lake Forest Park Historical Revenues, General Fund 2000-2003 (current dollars)

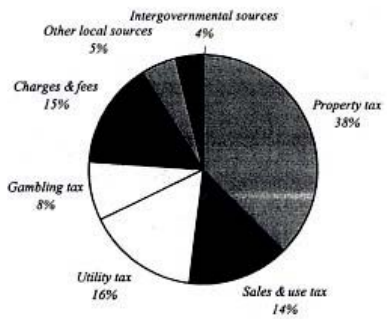
Revenue by Source 2000-2003	*FY 2000 Actual*	*FY 2001 Actual*	*FY 2002 Revised*	*FY 2003 Proposed*
Local sources				
Property tax	$2,253,394	$2,316,025	$2,440,636	$2,461,726
Sales tax	$464,673	$495,211	$491,582	$490,000
Criminal justice 1/10 sales tax	$274,721	$266,741	$245,714	$240,000
Business tax	$116,830	$139,717	$153,558	$145,000
Admission tax	$16,281	$17,349	$18,254	$15,000
Utility tax	$299,405	$385,330	$414,890	$460,000
Gambling tax	$0	$1,142	$799	$800
Other taxes	$1,894	$1,671	$1,527	$1,500
Cable franchise fees	$71,682	$126,812	$109,821	$120,000
Building permits	$150,383	$163,195	$179,143	$160,000
Other licenses and permits	$184,948	$190,563	$279,682	$251,000
Other charges for services	$417,265	$329,196	$391,910	$359,500
Subtotal, local sources	**$4,251,475**	**$4,432,951**	**$4,727,515**	**$4,704,526**
Intergovernmental sources				
State grants	$4,081	$2,671	$33,750	$15,997
Recycling grants	$14,857	$14,151	$19,795	$19,795
Motor vehicle excise tax	$1,344,683	$897,932	$311,000	$0
Equilization allocations	$221,521	$0	$0	$0
Liquor excise tax	$42,609	$44,419	$44,000	$44,000
Liquor board profits	$79,136	$71,229	$72,118	$75,000
Other intergovernment revenues	$93,062	$49,494	$65,361	$71,416
Subtotal, intergovernment sources	**$1,799,949**	**$1,079,895**	**$546,024**	**$226,208**
Total operating revenues	**$6,051,424**	**$5,512,846**	**$5,273,539**	**$4,930,734**
Beginning fund balance	$382,919	$1,737,703	$2,156,817	$1,369,588
Interest & interfund transactions	$220,423	$202,327	$241,336	$198,594
Total available revenues	**$6,654,765**	**$7,452,877**	**$7,671,691**	**$6,498,916**
Per capita	$517	$578	$597	
Population	12,871	12,889	12,860	na

Note: na is not available
Sources: City of Lake Forest Park, Finance Department; Washington State Office of Financial Management (population).

Out of total operating revenues projected for 2003 in the City of Kenmore, 38 percent will come from property tax collections (Figure 1). The property tax base (taxable assessed valuation) for the City of Kenmore in 2003 (projected) tax collections stands at $2.71 million, substantially up from $2.3 million in 2000. (The City's property tax levy rate for 2002 was 1.8500 per $1,000 assessed valuation.) Property tax collections increased by 5.4 percent per annum between 2000 and 2003, as shown in Table 1.

The sales and use tax[1] contributed $1.05 million or 14.5 percent of total revenues by source in 2003. As shown in Table 1, taxes from this source increased over the recent period at 3.3 percent per annum. The City's sales tax rate is 0.85 percent of taxable sales (1.0 percent less 0.15 percent distributed to King County). Sales tax distributions for criminal justice are made on a population-weighted basis from countywide collections.

Figure 1. General Revenues by Major Source, City of Kenmore, FY2003 Budget



Source: City of Kenmore, Finance Department.

Utility taxes, aggregated for all utilities (electrical, gas, telephone), represent the next largest tax source at $1.14 million in 2002, increased from $879,800 in 2000, for an annual average rate of growth of 9.9 percent. Tax collections from this source represented 16 percent of total operating revenues by source.

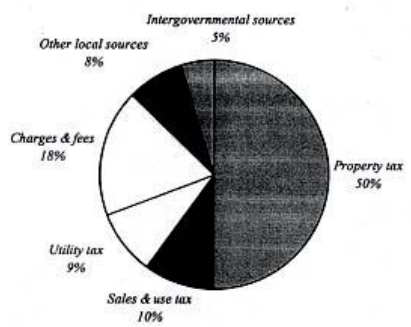
Total available revenue (general fund) to the City of Kenmore, including funds from beginning fund balance, interest and interfund transactions, are budgeted at $10.23 million in 2002. This amount represents a decline of only 3.35 percent below the City's 2000 level of $10.59 million; but almost a third reduction from 2002 revised total available revenues of $15.15 million.

[1] Retail sales tax is paid by the purchaser based on the selling price of tangible goods and certain services; the use tax is paid by the user on which no sales tax was paid, for example on goods purchased from sellers located in other states.

For the City of Lake Forest Park, half of total operating revenues projected for 2003 will come from property tax collections (Figure 2). The property tax base (taxable assessed valuation) for the City of Lake Forest Park in 2003 (projected) tax collections stands at $2.46 million, moderately up from $2.25 million in 2000. (The City's property tax levy rate for 2002 was 1.7538 per $1,000 assessed valuation.) Property tax collections increased by 3.1 percent per annum between 2000 and 2003, as shown in Table 2.

The sales and use tax contributed only $490,000 or 9.9 percent of total operating revenues by source in 2003. As shown in Table 2, taxes from this source slightly increased over the recent period at 1.8 percent per annum. The City's sales tax rate is 0.85 percent of taxable sales (1.0 percent less 0.15 percent distributed to King County).

Figure 2. General Revenues by Major Source, City of Lake Forest Park, FY2003 Budget



Source: City of Lake Forest Park, Finance Department

Utility taxes, aggregated for all utilities (electrical, gas, telephone), represent the next largest tax source at $1.14 million in 2002, increased from $879,800 in 2000, for an annual average rate of growth of 9.9 percent. Tax collections from this source represented 16 percent of total operating revenues by source.

Total available revenue (general fund) to the City of Lake Forest Park, including funds from beginning fund balance, interest and interfund transactions, are budgeted at $6.5 million in 2002. This amount represents a decline of only 2.34 percent below the City's 2000 level of $6.65 million; but 15.2 percent reduction from 2002 revised total available revenues of $7.67 million.

Proposed Brightwater Wastewater Treatment Conveyance System—Project Description

The discussion presented in this section is intended to indicate only those key elements of the Brightwater wastewater treatment conveyance system that relate to the economic and fiscal issues dealt with in this study (a full description of the proposed project is available in the *Brightwater Draft EIS*).

Construction Phase of Brightwater Wastewater Conveyance System

The proposed Brightwater Wastewater conveyance system is part of a wastewater treatment system that comprises a number of components:

- An influent pipeline for carrying untreated wastewater to the plant;
- An effluent pipeline for carrying treated wastewater from the plant;
- A pump station to lift the wastewater to higher elevations so that it can continue to flow by gravity (depending on the alternative selected);
- Portals to provide access for tunneling equipment during pipeline construction and for pipeline maintenance after construction; and
- An outfall pipeline in Puget Sound with a diffuser at the end to mix the treated wastewater with water currents in the Sound.

The influent pipeline would follow a corridor of 7.8 miles from the intersection of Ballinger Way NE and NE 178th Street in Lake Forest Park, along Bothell Way NE near the northern end of Lake Washington to the intersection with NE 83rd Street before heading northeast through Bothell into Snohomish County to the treatment plant. The proposed influent pipeline traverses the Cities of Lake Forest Park and Kenmore for a distance of 0.75 miles and 2.88 miles respectively.

The effluent pipeline would follow a corridor of 12.5 miles that extends from the treatment plant to NE 195th Street, traversing the Cities of Kenmore and Lake Forest Park to Ballinger Way NE (State Route 104). At this intersection, the corridor turns northwest along Ballinger Way NE to NE 205th Street in Shoreline before heading into the Puget Sound. The effluent pipeline traverses the Cities of Kenmore and Lake Forest Park for a distance of 2.88 miles and 1.5 miles respectively.

These conveyance tunnels will be placed within a 1,000-foot-wide corridor of land while the portal siting areas are 72-acre (2,000-foot-diameter) areas within which only 1-2 acres would be used for construction of the portals. Portals will serve as staging areas and access points for tunnel construction. Six of the total ten portals (see Table 3) on the preferred influent and effluent pipeline corridors are located within the City limits of Lake Forest Park (2 portals) and Kenmore (4 portals).

Table 3. Location of Portals for Route 9- 195th Street System Preferred Alternative

Portal	*Location*	*Jurisdiction*
Route 9 Effluent		
7	**Ballinger Way NE & NE 195th Street**	**Lake Forest Park/Shoreline**
19	NW 205th Street & Richmond Beach Dr.	Shoreline/Woodway
23	NW 205th Street & NW 3rd Avenue	Shoreline/Edmonds
27	Lake Ballinger Way & NE 1st Avenue	Shoreline/Edmonds
45	**NE 195th Street & NE 57th Avenue**	**Kenmore/Lake Forest Park**
44	**NE 195th Street & NE 80th Avenue**	**Kenmore**
Route 9 Effluent/Influent		
41	NE 195th Street & NE 120 Avenue	Bothell
Route 9 Influent		
10	**Ballinger Way NE & NE 178th Street**	**Lake Forest Park**
11	**Bothell Way NE & NE 66th Avenue**	**Kenmore**
34	**Bothell Way NE & NE 80th Avenue**	**Kenmore**

Source: *Brightwater Draft EIS*

The total construction cost for the conveyance system alone (assuming the Force Main/Gravity Tunnel, the preferred system) is estimated at $728 million in 2002 dollars, (*Brightwater Treatment System, Cost Estimates for the Brightwater Systems, Information Handout, November 16, 2002*). These cost outlays have in turn been distributed over an estimated 2005-2008 timeframe of construction for the entire conveyance system as well as the Kenmore-Lake Forest Park segments (Table 4).

Table 4. Construction Cost Outlays for the Brightwater Conveyance System, 2005-2008 (in millions $)

Year	*Total System Cost*	*Estimated Cost*		
		Lake Forest Park	*Kenmore*	*City Total*
2005	$192.20	$23.6	$60.3	$83.9
2006	$227.50	$27.9	$71.4	$99.3
2007	$173.50	$21.3	$54.4	$75.7
2008	$134.80	$16.6	$42.3	$58.9
Cumulative total	**$728.00**	**$89.4**	**$228.4**	**$317.8**

The conveyance system is to be built over a four-year period, with the system expected to be fully-operational by 2010. The schedule for construction of the conveyance system calls for site preparation and portal construction– 1 to 2 years; tunneling of influent and effluent pipeline– 2 to 4 years and testing/startup – 1 year. Some of these activities will be carried out concurrently. For

purposes of this analysis, it is assumed that construction of the conveyance system will commence in 2005 and be completed at the end of 2008, with operations to begin in year 2010.

The total construction cost for the conveyance system within the jurisdictions of Kenmore and Lake Forest Park (assuming the Force Main/Gravity Tunnel, the preferred system) is estimated at $317.8 million in 2002 dollars. These cost outlays for building the Kenmore-Lake Forest Park conveyance segments have in turn been distributed over the 2005-2008 timeframe of construction (see Table 4).

Construction labor at the Brightwater conveyance system is estimated at a level of 250 workers during the peak construction period. Truck drivers would add an additional 60 – 70 workers. Combined, the total peak construction workforce is estimated at 310 – 320 workers (*Brightwater Draft EIS*, p. 16-37). These workers will be engaged along the entire conveyance system; 40 percent of which lies within the Cities of Lake Forest Park and Kenmore. (For purposes of this study, the construction workforce is estimated for several worker categories, namely, construction, architecture/engineering and administration, and machinery and equipment operation. Adding these other worker categories increases the peak construction workforce to 360 workers, as shown in Table 5 below.)

Economic and Fiscal (Revenue) Impacts Associated with the Brightwater Conveyance System

The primary focus of the analysis of economic impacts related to the Brightwater conveyance system is on the employment and earnings[2] generated during construction of the Kenmore and Lake Forest Park segments of the system. Employment measured in terms of full-time-equivalents is given for only construction, as shown in Table 5. Operation of the conveyance system is expected to yield no direct workers; maintenance of the system will be "housed" at the wastewater treatment facility. Several worker categories including construction workers, machinery and equipment operation workers, and architectural, engineering, and administrative (A/E&A) workers are included in the direct worker totals. Peak year employment for the Kenmore-Lake Forest Park segments was estimated at 214 workers of whom about 70 percent are in construction occupations. Both construction and A/E&A workers were estimated based on their respective cost shares of total construction program outlays. For construction workers the labor share represented 26.1 percent of total contract construction outlays based on the *1997 Census of Heavy Construction Contractors*. The labor share represented by machine and equipment installers was estimated at 33.3 percent of expenditures for these materials. The labor share represented by A/E&A workers was estimated at 38.8 percent of expenditures represented by these activities. The labor share for this worker group was based on the earnings to output ratio for the engineering and architectural services sector in Washington State in 2000 (as reported in tabulations generated by the IMPLAN, 2000 Version economic impact model used in this study).

The average annual wage applied for construction workers (water, sewer, and utility lines workers) is $49,500 unadjusted and $55,100 adjusted (i.e., with benefits). Similarly, architecture, engineering and administration (A&E/A) worker annual earnings were based on average earnings for architecture, engineering and management, at $56,250 unadjusted ($62,500 adjusted); again based on information from the U.S. Bureau of Labor Statistics.

Indirect earnings were estimated at $42,400 unadjusted ($47,900 adjusted), based on the state average for all workers in the local government, state government, finance, insurance, and real estate (FIRE), retail trade, and services sectors, exclusive of prepackage software and computer programming, and a portion of the construction, wholesale trade, and transportation and public utilities sectors. U.S. Bureau of Labor Statistics data for 2001 was used to estimate the indirect earnings average, which was then inflated to 2002 dollars.

[2] Earnings refer to wages and salaries of workers and proprietors' income.

Table 5. Brightwater Conveyance System Employment and Earnings for Kenmore and Lake Forest Park Segments (2002 Millions $)

Category	*2005*	*2006*	*2007*	*2008*
Direct workforce	**181**	**214**	**163**	**127**
Construction	135	150	120	96
Machinery& equipment operators	33	48	30	21
Architecture, engineering & administration	13	16	13	10
Indirect workforce	167	198	150	117
Total employment	**348**	**412**	**313**	**244**
Direct earnings (millions $)	**$10.25**	**$12.27**	**$9.30**	**$7.22**
Indirect earnings (millions $)	$6.16	$7.36	$5.58	$4.29
Total earnings (millions $)	**$16.41**	**$19.63**	**$14.88**	**$11.51**

Indirect employment and earnings were estimated based on multipliers obtained from the Washington State input-output model (IMPLAN, 2000 and Chase, 1996). The estimated employment multiplier for the Brightwater conveyance system is 1.92; in other words, for every construction-related worker along the Kenmore-Lake Forest Park segment, there is another 0.92 worker hired in other businesses within the region. In similar fashion, the earnings multiplier for the Brightwater conveyance system is 1.60; meaning that every construction-related dollar results in another 0.6 dollars generated within the regional economy.

Although the employment and earnings impacts are expected to be significant during construction of the Kenmore-Lake Forest Park segments, it does not necessarily follow that all of these direct workers (or even a modest share) will reside within these two Cities. In fact, based on previous studies, available labor for heavy construction trades is expected to be drawn from a multi-county region (for example, King, Snohomish, and Pierce Counties). For the indirect workers, shares attributable to these two Cities is expected to be somewhat higher based on a multitude of factors including increased expenditures by on-site workers, and local trade and service businesses hiring higher share of local workers. Table 6 provides shares that are order-of-magnitude estimates of workers by place of residence, including the Cities of Kenmore and Lake Forest Park. It is difficult to predict with any precision where workers reside; however, based on previous experience with construction workforce commutation and relocation behavior, these are reasonable estimates.

Table 6. Labor Supply of Kenmore-Lake Forest Park Segments of the Brightwater Conveyance System, 2005-2008

Distribution by Residence	*Worker Supply*	*Worker Demand*			
		2005	*2006*	*2007*	*2008*
Direct workforce					
Kenmore & Lake Forest Park	**5%**	**9**	**11**	**8**	**6**
Rest of King County	50%	91	107	82	64
Snohomish County	30%	54	64	49	38
Pierce County	10%	18	21	16	13
Rest of Washington	5%	9	11	8	6
Total direct workforce	100%	181	214	163	127
Indirect workforce					
Kenmore & Lake Forest Park	**10%**	**17**	**20**	**15**	**12**
Rest of King County	60%	100	119	90	70
Snohomish County	25%	42	49	38	29
Pierce County	3%	5	6	5	4
Rest of Washington	2%	3	4	3	2
Total indirect workforce	100%	167	198	150	117

Construction of the Brightwater conveyance system will require millions of dollars worth of materials and supplies. A significant portion of these materials and supplies will be purchased from local vendors within the region, some of which are located within the Cities of Kenmore and Lake Forest Park. Sales and use tax collections represent the major component of direct revenue contributions to the Cities. The property tax is not applicable, as the project would be publicly-owned; along with the real estate excise tax. Finally, the utility tax on electricity is estimated to generate negligible revenues during construction.

Similar to the required workforce being drawn from a wide area, required materials and supplies for construction of the conveyance system will likewise be obtained from the greater Puget Sound region. Given the present mix of businesses within the Cities of Kenmore and Lake Forest Park, few construction-related purchases for needed materials and supplies will be directly purchased within these two Cities. Consequently, the expected increase in sales tax collections due to construction of conveyance system is modest at best; less than $50,000 in sales tax will be collected over the four-year construction period (Table 7).

Table 7. Construction of Brightwater Conveyance System: Sales & Use Tax Collections (2002 dollars)

City	*2005*	*2006*	*2007*	*2008*	*Cumulative Total*
Lake Forest Park	$1,800	$2,100	$1,600	$1,200	$6,700
Kenmore	$11,300	$13,300	$10,100	$7,900	$42,600
Total, combined Cities	$13,100	$15,400	$11,700	$9,100	$49,300

Potential Adverse Economic Impacts

Will the construction-related activity hamper or adversely affect nearby existing businesses within the Cities of Kenmore and Lake Forest Park? Two of the designated portals (namely, portal #10 at the intersection of Ballinger Way NE and NE 178th Street; and portal #11 at the intersection of NE Bothell Way and 66th Avenue NE) include major shopping districts within the Cities of Kenmore and Lake Forest Park. Obviously, the specific final location for these portals could adversely affect existing retail trade and service establishments within Kenmore and Lake Forest Park. In order to minimize adverse economic impacts, planners will need to locate the staging areas for these two portals away from these major shopping districts. Increased truck traffic associated with these two portals may be associated with a decline in shopping trips to these retail districts. However, given the imprecise location of these staging areas, potential economic impacts can not be quantified.

Summary and Conclusions

This study provides an assessment of the economic and fiscal impacts for the proposed conveyance system traversing the Cities of Kenmore and Lake Forest Park. Placement of the conveyance system—influent and effluent pipelines will affect a stream of revenues and create jobs within these Cities.

Results indicate that construction of the Brightwater conveyance system will generate only modest gains in employment, directly related to the project as well as spin-off employment within the Cities. Peak construction employment for the Kenmore-Lake Forest Park segments of the Brightwater conveyance system is estimated at 412 workers, with total earnings of $19.6 million in year 2006. However, only a small share (5 percent) of these workers is expected to reside locally within the Cities of Kenmore and Lake Forest Park.

Revenue impacts on the Cities of Kenmore and Lake Forest Park are also projected to be quite modest; these two Cities are projected to collect less than $50,000 in sales tax over the construction period. Given the imprecise location of the construction staging areas (i.e., portals), it can not be determined the potential adverse effects to existing businesses of nearby shopping districts in the two Cities.

C4
CITY OF LAKE FOREST PARK

FINAL
ENVIRONMENTAL
IMPACT STATEMENT

Brightwater
Regional Wastewater
Treatment System

COMMENTS AND RESPONSES

Mayor
David R. Hutchinson

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CITY OF LAKE FOREST PARK
INCORPORATED 1961

Councilmembers
Carolyn Armanini
Mary Jane Goss
Nathan Herzog
Alan S. Kiest
Roger Olstad
Ed Sterner
Dwight A. Thompson

January 21, 2003

RECEIVED
JAN 21 2003
ENVIRONMENTAL
PLANNING DIVISION

Don Theiler, Manager and SEPA Responsible Official
Environmental Planning
King County Wastewater Treatment Division
King Street Center: KSC-NR-0505
201 South Jackson Street
Seattle, WA 98104-9972

Dear Mr. Theiler:

The City of Lake Forest Park hereby submits the following comments on the Brightwater Regional Wastewater Treatment System Draft Environmental Impact Statement. Our comments begin with some general observations on the project and DEIS specific to Lake Forest Park, which includes an *overview of specific concerns* and *mitigation measures apparent at this time*. Following these general comments, more specific comments by our subconsultants are provided on each chapter of the DEIS. The cities of Lake Forest Park and Kenmore jointly contracted with several consultants to maximize resources available. The specific comments attached include reviews of both cities. C4-1

Our comments are focused on the conveyance system of the DEIS, since it is proposed to extend through our community. The impacts of the proposed system will significantly affect residential and commercial areas of our City. The City of Lake Forest Park requests that all the comments contained herein be addressed in the Final Environmental Impact Statement (FEIS) for this project. C4-2

The DEIS is general in nature with no detail as to how the plant or other facilities will be designed or will function. Consequently, it is difficult to provide our comments in regard to specific impacts. There are three options for addressing our overall concern with the lack of specifics in the DEIS. C4-3

1. Address specific items in the Final EIS, or
2. Commit to a phased environmental review, or
3. Enter into an Interlocal Agreement to provide a means to the City to review the impacts of specific project components and require mitigation for potential impacts.

The City recommends that an Interlocal Agreement between the City and County be entered into that clearly specifies how and when specifics of the project will be reviewed, and what mitigation measures will be included to address potential impacts.

Following is an overview of specific concerns that need to be further addressed in the FEIS, followed by some of the mitigation measures apparent at this time that should be addressed. Detailed comments on the DEIS are attached separately and address each section reviewed.

Response to Comment C4-1

King County noted that the Cities of Lake Forest Park and Kenmore submitted separate comment letters with the same attachment, a report prepared for both cities by ECG, Inc. King County has responded, individually, to each comment in the cover letters from each city, the consultant's report through Attachment A, and the January 11, 2003, memorandum regarding Brightwater Draft EIS Transportation Section Comments. We have not responded individually to comments in Attachment B, City of Lake Forest Park Comprehensive Plan, Revised Draft dated November 21, 2002, City of Kenmore Comprehensive Plan dated March 2001, or to comments in the January 16, 2003 (revised), report, "Economic and Fiscal Impacts of the Proposed Brightwater Wastewater Treatment System on the Cities of Kenmore and Lake Forest Park." However, the Lake Forest Park and Kenmore Comprehensive Plans were considered in the land use analysis in Chapter 11 of the Final EIS. Economic and fiscal impacts are not part of an environmental analysis under SEPA; however, the report has been provided to the Brightwater project team for consideration.

Response to Comment C4-2

Comments will be responded to as referred to in the response to the City of Kenmore, Comment C3-1.

Response to Comment C4-3

Both the Draft EIS and the Final EIS include a discussion of the probable significant adverse environmental impacts and the reasonable mitigation measures for these identified impacts beyond that characterized in this comment. The Draft EIS was issued at a point in time when a certain level of information was known relating to the probable significant adverse impacts of the proposal and possible ways to reasonably mitigate those impacts. In areas where there was uncertainty in relation to impacts in one respect or another,

the Draft EIS presented, consistent with SEPA Guidelines, a worst-case analysis of impacts. The Draft EIS also indicated that ongoing analysis was under way and that additional information would be forthcoming in the Final EIS and otherwise. The purpose of a Final EIS is to respond to comments on the Draft EIS and, where appropriate, to provide additional or revised information and analysis relating to probable significant impacts of the proposal and reasonable mitigation measures. Since issuance of the Draft EIS in late 2002, considerable additional analysis has been conducted, as is the case on any large project, to further define and develop the proposal and to respond to Draft EIS comments. A number of the details requested the various comments in this letter relate to either information that does not involve probable significant adverse environmental impacts or information that is important prior to issuance of actual permits but may not be essential to include in an EIS. Additional analysis that has been conducted that relates to probable significant adverse impacts that will not be mitigated or regulated into non-significance is included as part of the Final EIS analysis. This includes additional analysis regarding potential impacts to water resources, including potential impacts to Lake Forest Park Water District’s wells and aquifer, in Chapter 6 of the Final EIS.

OVERVIEW OF SPECIFIC CONCERNS THAT NEED TO BE FURTHER ADDRESSED:

C4-4 1. The City of Lake Forest Park is on the edge of the service boundary of the Brightwater Treatment Plant. Currently, sewage flows to the West Point Treatment Plant from the City. It is not shown how or what determined the service boundaries for the Brightwater Treatment Plant. Can the City continue to flow into West Point Treatment Plant, which would eliminate the need for an influent portal and tunneling in the City? By what criteria was the boundary set, and can or should it be re-evaluated? This would eliminate much, if not all, of the impacts from the influent line for Brightwater.

C4-5 2. The Preferred Alternative, Route 9-195th Street System, has the most impacts on the City of Lake Forest Park of the three alternatives studied in the DEIS. There is no quantitative basis or explanation as to why this is a better route than the Route 9-228th Street System Alternative. More detail is needed in comparison of the two routes and the process in determining the preferred route.

C4-6 3. More thorough evaluation is needed evaluating details and impacts to providing a Micro-tunnel versus a Deep Tunnel for the influent line in Lake Forest Park. One large portal is required for the Tunnel where as Micro-tunnels would require four smaller pits along the length. Impact comparisons are needed to properties, business, traffic, streams, wetlands, utilities, etc. There is a lack of detail and impacts in the DEIS on how the McAleer and the Lyon sewer trunk lines will be connected. There is a deep concern as to the extent and impacts of open trenching to make the connections. This needs to be thoroughly analyzed and the City will make the decision as to which options to pursue.

C4-7 4. The Portal 10 circle includes a large portion of the retail and business center in Lake Forest Park. Location of the portal should be coordinated with and approved by the City.

C4-8 5. The **Earth and Groundwater** Section of the DEIS lacks project design specifics. More geologic mapping is needed. The well head protection zone for the well field serving Lake Forest Park should be identified and relationships shown to the proposed conveyance options. There is no quantitative basis for the opinion in the DEIS that dewatering up gradient of the well field will not have impacts. Impacts of dewatering have not been adequately addressed as it relates to the aquifer. Other issues regarding tunneling impacts need to be further addressed. More definition of the aquifer is needed to assess impacts. The quality of water from this aquifer is a unique resource and part of the identity of the City of Lake Forest Park that needs to be protected. The Lake Forest Park Water District is not listed as an affected agency in the DEIS and should be added to the FEIS.

C4-9

C4-10

C4-11 6. The **Surface Water** Section of the DEIS lacks project design specifics. The impacts of erosion and sedimentation have not been quantified. It does not address what surface water monitoring will be performed. There has been no analysis as to the impact on the City's storm water system, the adequacy of the storm drainage system, and the methods of dewatering and disposal. We recommend a baseline geomorphic survey of potentially affected streams prior to construction and regular monitoring during and after construction. Potential mitigation activities should be identified. Where mitigation can not fully be achieved for one element, other potential mitigation elements should be studied to offset impacts and quality of life.

C4-12

C4-13

C4-14 7. The **Plants, Animals and Wetlands** Section of the DEIS is poorly defined at the present time such that it is difficult to assess the actual potential impacts and the adequacy of potential mitigation measures.

2

Response to Comment C4-4

Population and employment forecasts in north King County and south Snohomish County and how the forecasts are used to calculate wastewater flows are discussed in Chapter 2 and Appendix 2-A, Population and Flow Analysis, of the Final EIS. Based on this revised data, flows from the City of Lake Forest Park would continue to be treated at West Point.

Portal 10 has been eliminated as a primary portal from the Route 9 conveyance alternatives. It remains a proposed secondary portal for the Unocal System. Please refer to Chapter 3 of the Final EIS for the distinction between primary and secondary portals.

Response to Comment C4-5

Please refer to the revised project description in Chapter 3 of the Final EIS for a more detailed comparison of alternatives.

Response to Comment C4-6

Due to additional flow management analysis, the reach from Portal 10 to 11 would no longer be required for the Route 9 System. This reach is still part of the Unocal System; however, Portal 10 is a secondary portal only. The change is described in Chapter 3 of the Final EIS.

When needed, likely to be several decades from now, a smaller local connection from the existing conveyance system would be made to Portal 11 using open-cut or micro-tunneling construction methods. Coordination with the City of Lake Forest Park would occur at the time it is proposed.

Response to Comment C4-7

Portal 10 has been eliminated as a primary portal from the Route 9 conveyance alternatives. It remains a proposed secondary portal for the Unocal System. Please refer to Chapter 3 of the Final EIS for the distinction between primary and secondary portals.

Response to Comment C4-8

King County recognizes the unique nature of the groundwater resource serving Lake Forest Park and is committed to protecting both its quality and quantity during construction and operation of the conveyance system. Due to the importance of this area, considerable new information has been developed on the nature of the resource through the drilling of new borings, the implementation of a water level monitoring program, and development of subsurface cross sections specific to this area. In addition, extensive numerical analyses of groundwater withdrawal during construction and groundwater infiltration during operation have been conducted to provide a quantitative bracket on effects to water levels in the area. All of this information is presented in Appendix 6-B, Geology and Groundwater, of the Final EIS.

The new information shows that the Unocal corridor would pass below and down-gradient or cross-gradient of the Lake Forest Park Wellfield and would therefore have essentially no effect on wellfield supply or quality. The same is true for the Route 9-228th Street corridor; it is effectively too distant to have any real effect on groundwater conditions in the Lake Forest Park area. The Route 9-195th Street corridor is the only alternative that could potentially affect the wellfield, given that it passes within a few thousand feet of the wellfield in an anticipated up-gradient area. Existing surficial geologic information available through the Seattle Area Geologic Mapping Project (SGMP) is the most current source of geologic mapping in the project area and is considered to be suitable for EIS purposes. Appendix 6-B, Geology and Groundwater presents a more detailed discussion of geology and includes figures showing the Lake Forest Park Water District wellhead protection area and its relationship to the conveyance options

The number of proposed primary portals locations has also been reduced, with the elimination of Portal 10 (in downtown Lake Forest Park) from the Route 9 alternatives and Portal 45 (potentially up-gradient of the wellfield) as a primary portal in the Route 9 System. Portal 45 is now considered a secondary portal for the Route 9-195th Street and Unocal alternatives. Portal 10 is a secondary portal for the Unocal alternative only. Secondary portals are retained for ancillary purposes. Also, please refer to the response to Comment C4-24 in this letter. The remaining primary portals in the area, 7, 11, and 44 are also either too distant to impact the wellfield, or are located at down-gradient locations.

The Lake Forest Park Wellfield is completed in two water-bearing intervals, a shallow zone (within 20 feet of land surface) that likely represents groundwater within the regional Qva aquifer, and a deeper zone in older relatively thin fluvial deposits. Groundwater in these older deposits is termed Qu aquifers in Appendix 6-B. Based on the explorations conducted to date, the Qu aquifer fluvial deposits occur within a narrow elevation zone and are both overlain and underlain by fine-grained sediments that appear to yield little water. In other words, the “Lake Forest Park aquifer” is a thin water-bearing zone within a thick section of low permeability sediments. These Qu fluvial deposits contain groundwater under artesian pressure, indicating recharge from higher elevations to the north. The proposed 195th Street tunnel depth is close to the elevation of the water-bearing zone, but is below it by approximately 50 feet. Therefore, although the 195th alignment could potentially affect the wellfield, the effect is not anticipated to be significant. The ongoing conveyance system pre-design exploration program being conducted currently will provide additional detail on the relationship between the tunnel elevation and the depth of the Qu aquifer in this area.

Water quality conditions in the Lake Forest Park aquifer are not anticipated to be affected by either construction or operation of the tunnel. During construction, groundwater would seep into the tunnel under pressure, such that any contaminants associated with the tunneling operation would not migrate outward, but would stay within the tunnel for removal along with the spoil. During operation, hydraulic analysis shows that only infiltration has the potential to occur in the section of tunnel passing through the Lake Forest Park area. Internal hydraulic pressures in this segment will be less than external hydrostatic pressures, thus providing an inward gradient.

Although no significant impacts are anticipated and the analyses indicate a low potential for the conveyance system to adversely affect the Lake Forest Park Wellfield, King County recognizes that some

monitoring is advisable as a "just in case" precautionary measure. The monitoring program would include baseline and construction monitoring sufficient to provide an early warning of an adverse effect. The monitoring program would be developed in conjunction with input from the Lake Forest Park Water District.

Response to Comment C4-9

Please refer to the response to Comment C4-8 in this letter.

Response to Comment C4-10

The Draft EIS did not include a list of affected agencies since all agencies that will be affected will not be known until final project design and permit submittal. The Lake Forest Park Water District was mistakenly listed as the Lake Forest Park Water and Sewer District on the Distribution List in Appendix A of the Draft EIS. The reference has been corrected; the Lake Forest Park Water District is listed on the Distribution List in the Final EIS and will receive a copy of the Final EIS. The City of Lake Forest Park is listed as a King County wastewater customer in Chapter 2 of the Draft and Final EIS because it is the City, not the Water District, which provides service to wastewater customers.

In addition, the Water District was discussed in appropriate sections of the Draft EIS; for example, refer to Section 4.1.4.5, Groundwater, and Table 4-4. The Water District is also discussed in appropriate sections of the Final EIS, particularly in sections that discuss aquifers and wellhead protection areas.

Response to Comment C4-11

Please refer to the response to the City of Kenmore, Comment C3-8.

Response to Comment C4-12

Please refer to the response to the City of Kenmore, Comment C3-9.

Response to Comment C4-13

Updated surface water impacts and mitigation information can be found in Chapter 6 of the Final EIS and in the response to the City of Kenmore, Comment C3-10.

Response to Comment C4-14

Substantial new information has been added to Chapter 7 of the Final EIS. Please refer to the response to City of Kenmore, Comment C3-11.

C4-15 C4-16 C4-17

8. The **Land And Shoreline Use, Aesthetics, Light and Glare, Recreation and Cultural Resources** Sections of the DEIS neglect to address the Comprehensive Plan for Lake Forest Park and therefore may be in conflict. There are impacts which need further addressing and consideration should be given for community goals and desires prior to final siting of Portals or facilities. The City should be involved in and approve the final location of all facilities within the City as well as Portal 45 and 7 adjacent to the City limits. Impacts to the neighborhood character will need to be assessed as it relates to the air quality, dust, noise level, vibrations, and aesthetics.

C4-18

9. The Transportation Section of the DEIS does not address specific impacts to the Portal locations. When the actual locations and truck routes are identified additional analysis should be conducted to identify impacts to streets. Improvements may be required to accommodate truck access for construction. Pedestrian improvements, overlays and/or road construction will very likely be required to local roads where there are truck traffic and vehicle impacts. Impacts to the neighborhood character will need to be assessed as it relates to the truck routes, the number of trucks, hours of work the trucks and portals are operating, neighborhood safety, and traffic calming measures. Routes of trucks, times of operation and duration need to be reviewed and approved by the City. Compensation will need to be provided to the City to reimburse for monitoring and inspections.

MITIGATION MEASURES APPARENT AT THIS TIME:

C4-19

1. The County should provide full and complete mitigation to the City for any adverse impacts associated with the conveyance system improvements. A mitigation fund should be provided to the City to be used for improvements and mitigation. One proposed use of the funds is to provide sewer service to unsewered areas. This would mitigate ground water quality impacts from the project and possible impacts to the local sewer drainfields requiring connections to the public sewer. Funds may be needed to reduce any existing storm drainage inflow into the system. This would mitigate and reduce the probability of a sewer overflow into Lake Washington.

C4-20

2. The County should mitigate impacts to the streets within Lake Forest Park before, during and after construction. Truck routes and traffic circulation need to be studied. Anticipated mitigation would include street overlays or reconstruction, sight distance improvements, curb radii improvements, pedestrian safety improvements, undergrounding of utilities, and signal improvements. Depending on impacts and traffic circulation, bridge replacement of the Hamlin Road Bridge is a likely mitigation requirement.

C4-21

3. Details of the project need to be further addressed in the FEIS and mitigation measures need to be provided to insure the protection of groundwater, streams, and wetlands. Details of the mitigation would be determined when specifics are more clearly identified. Improvements to the City's storm drainage system may be necessary. Other mitigation elements may require the enhancements of stream corridors and stream basins.

C4-22

4. Bonding or other financial security will be necessary to mitigate any unforeseen impacts which may arise during or after construction.

C4-23 C4-24

5. When specific portal, tunnel and trench locations are identified, an analysis must be performed to address and mitigate possible economic impacts to businesses at the Town Center and other economic activities. Residential impacts and their relation to the City's GMA obligations pertaining to the number of housing units allocated to the City will need to be addressed and mitigated.

3

Response to Comment C4-15

Please refer to the response to the City of Kenmore, Comment C3-12.

Response to Comment C4-16

The portal sites located within the City of Lake Forest Park include Portal Siting Areas (PSAs) 7 and 45. PSA 7 is partially within the City of Shoreline and PSA 45 is primarily within the City of Kenmore.

PSA 7 has been designated as a primary portal for construction of the Unocal influent tunnel. PSA 45 is now a secondary portal; construction at these portals would occur for ancillary purposes. A final decision on the need for secondary portals will be made during final design. The following scenarios may result in the use of secondary portals: auxiliary ventilation, deep ground improvement, and supply of backfill grout.

Recent Level 2 portal screening that was conducted as part of the Brightwater conveyance predesign identified candidate sites to carry forward for further screening. These sites met engineering needs and minimized environmental and community impacts. The Brightwater Conveyance Predesign Level 2 Portal Screening process is described in Chapter 2 and Appendix 2-B, Portal Screening Level 1 and 2 Documentation, of the Final EIS.

Of the final list of candidate sites, none of the candidate sites for PSA 7 are located within the City of Lake Forest Park. Two candidate parcels for PSA 45 are located in the Single Family Residential zone.

The exact location of portal facilities would be determined once a final Brightwater System Alternative is selected. If a candidate site within the City of Lake Forest Park were selected, King County would coordinate with the affected property owners and the City to determine the ultimate location of facilities on the site.

Response to Comment C4-17

Updated impacts and mitigation information can be found in the Final EIS. Please refer to Chapters 5, 10, and 12 of the Final EIS.

Response to Comment C4-18

Please refer to the response to the City of Kenmore, Comment C3-16.

Response to Comment C4-19

Local wastewater agencies collect wastewater from homes and businesses and contract with King County to convey and treat the wastewater at one of our regional treatment plants. The decision regarding where and when to build or extend service lines rests with the local wastewater districts and agencies. These decisions are based on local land use decisions and are outside of King County's jurisdiction. Please refer to the response to the City of Shoreline, Comment C6-5, regarding mitigation suggestions.

Response to Comment C4-20

Please refer to the response to the City of Kenmore, Comment C3-16.

Response to Comment C4-21

Please refer to the response to the Washington State Department of Ecology and the City of Bothell, Comments W5-8 and C2-9 respectively, for description of mitigation for protection of groundwater, streams, and wetlands. Please refer to response to Comment C3-9 in this letter, for a description of the utilization of a local storm conveyance system.

Response to Comment C4-22

Please refer to the response to the City of Shoreline, Comment C6-5, regarding mitigation suggestions.

Response to Comment C4-23

Cost and economic impacts are not topics analyzed under SEPA and therefore are not addressed in the Brightwater EIS. "SEPA contemplates that the general welfare, social, economic and other requirements and essential considerations of state policy will be taken into account in weighing and balancing alternatives and in making final decisions. The EIS is not required to evaluate and document all of the possible effects and considerations of a decision or to contain the balancing judgments that must ultimately be made by the decision makers" (WAC 197-11-448(1)).

However, once a final decision is made on the location for the Brightwater System, King County will work directly with affected jurisdictions and permitting agencies on mitigation strategies and solutions to the construction and operational impacts. As part of the overall decision process, King County is revising the cost estimates (dated November 2002) for the Brightwater alternatives; the revised estimates will be updated at the end of 2003 and will be available on request by contacting the Brightwater project at brightwater@metrokc.gov, or 206-684-6799, or toll-free 1-888-707-8571.

Response to Comment C4-24

A review of recent data from King County's *Buildable Lands Evaluation Report* (King County, 2002), indicates that the City of Lake Forest Park has adequate land capacity to meet its year 2012 housing target with a surplus capacity for 198 units over its target (King County, 2002).

The portal sites located within the City of Lake Forest Park include portal siting areas (PSAs) 7, 10, and 45. PSA 10 is located entirely within the City of Lake Forest Park while PSA 7 is partially within the City of Shoreline and PSA 45 is primarily within the City of Kenmore. PSA 7 has been designated as a primary portal for construction of the Unocal system. PSAs 10 and 45 are now secondary portals; PSA 10 is a secondary portal for the Unocal System and PSA 45 would be for the Route 9 – 195th Street systems, respectively, meaning construction is not anticipated to be required at these PSAs. A final decision on the need for secondary portals will be made during final design. The following that may result in the use of secondary portals: auxiliary ventilation, deep ground improvement, and supply of backfill grout. Recent Level 2 portal screening that was conducted as part of the Brightwater conveyance predesign identified candidate sites to carry forward for further screening. These sites met engineering needs and minimized

environmental and community impacts. The Brightwater Conveyance Predesign Level 2 Portal Screening process is described in Chapter 2 and Appendix 2-B, Portal Screening Level 1 and 2 Documentation, of the Final EIS.

Of the final list of candidate sites, none of the candidate sites for PSA 7 are located within the City of Lake Forest Park. For PSA 10, one of the candidate sites is located within the City's Mixed Use Town Center zone and three are located within the Single Family Residential zone. Two candidate parcels for PSA 45 are located in the Single Family Residential zone. If a candidate site within the Single Family Residential zone were selected, construction would result in the removal of approximately two acres from the City's residential land capacity. Using the average density of 2.8 dwelling units per acre as indicated in King County's Buildable Lands Evaluation Report, this would reduce the City's overall housing capacity by approximately six dwelling units.

C4-25
C4-26

6. If any portal sites are turned over to the City for public use following construction, financial impacts to the City should be mitigated for ongoing maintenance and operation. If portal sites are located in residential areas and turned over to the City to be used as a park, mitigation should be provided for design, restoration and enhancement of the site as a park.

C4-27

7. Baseline studies should be performed for streams, wetlands, and water bodies to assess impacts and mitigation during and after construction. Impacts to trees should be addressed for tunnels, portals, and open trenches and an inventory may be required.

C4-28

8. Funds should be provided to the City equivalent to 1% of the construction cost for work within the City to be used for the 1% For Art Program.

C4-29

9. Mitigation will include cost reimbursement to the City for monitoring and inspecting construction impacts.

C4-30

10. The County should coordinate and work with the City's design consultants and other construction projects throughout the City, on schedules and City capital improvements to mitigate adverse impacts.

SPECIFIC COMMENTS TO THE DEIS:

Attached are the detailed comments prepared by GeoEngineers, The Transpo Group, and Huckell/Weinman Associates. GeoEngineers and The Transpo Group each addresses specific areas of the DEIS and Huckell/Weinman Associates addresses the economic and fiscal impacts on the City.

Thank you for the opportunity to comment on the Brightwater DEIS. If you have any questions regarding these comments, please contact Karen Haines, City Administrator, at 206/368-5440.

Sincerely,

Karen Haines for
David R. Hutchinson
Mayor

Encl: Consultant DEIS Specific Comments

cc: Lake Forest Park City Council Members
State Senator Darlene Fairley
State Representative Ruth Kagi
State Representative Maralyn Chase
Metropolitan King County Council Member Carolyn Edmonds
City of Kenmore
City of Shoreline
City of Mountlake Terrace
City of Brier
Lake Forest Park Water District

4

Response to Comment C4-25

After a final decision is made on the location for the Brightwater System, King County will work directly with affected jurisdictions on mitigation strategies and solutions to Brightwater construction and operational impacts.

Response to Comment C4-26

Please refer to the response to the City of Kenmore, Comment C3-22.

Response to Comment C4-27

Please refer to the response to the City of Kenmore, Comment C3-25.

Response to Comment C4-28

Please refer to the response to the City of Kenmore, Comment C3-26, for more information on King County's public art fund.

Response to Comment C4-29

Please refer to the response to the City of Shoreline, Comment C6-5, regarding mitigation suggestions.

Response to Comment C4-30

Please refer to the response to the City of Shoreline, Comment C6-5, regarding mitigation suggestions.

GeoEngineers

January 20, 2003

ECG, Inc.
17632 140th Avenue NE
Woodinville, Washington 98072

Attention: Chuck Price, P.E.

Consultation Services
Review of Draft Environmental Impact Statement, Brightwater Regional Wastewater Treatment System for City of Kenmore and City of Lake Forest Park
File No. 0146-093-01

INTRODUCTION

We are pleased to present this letter summarizing the results of our review of pertinent sections of the Draft Environmental Impact Statement (DEIS) for the Brightwater Regional Wastewater Treatment Systems, dated November 2002. Our services were requested by Mr. Chuck Price, P.E., of ECG, Inc. during a telephone conversation with Craig Erdman and Galan McInelly of GeoEngineers, Inc. on November 7, 2002. Mr. Price requested that we review portions of the DEIS on behalf of the City of Kenmore (Kenmore) and the City of Lake Forest Park (Lake Forest Park).

C4-31 The proposed Brightwater Regional Wastewater Treatment System will consist of a new treatment plant, influent and effluent conveyance corridors and a marine outfall. The reasons for the new treatment plant are presented in the DEIS. Four principal alternatives were developed for analysis in the DEIS, including the no action alternative. Two of the alternatives utilize the same wastewater treatment plant (WWTP) site (Rout 9 site, located northeast of Woodinville) and the same influent corridor, but would utilize separate effluent corridors to a marine outfall. The two effluent corridors are referred to as the 195th Corridor and 228th Corridor. The effluent conveyance corridors for the Route 9 site and the influent corridor for the Unocal site include options for a gravity lines or a combination of force main-gravity lines. The fourth alternative would utilize a separate WWTP site, referred to as the Unocal site, located in Edmonds, Washington. In addition, the influent corridor would utilize portions of the influent corridor considered for the Route 9 treatment plant site. A comparatively shorter effluent corridor would be required from the Unocal site to its designated marine outfall. The King County Executive selected the Route 9 WWTP site using the 195th corridor as the Preferred Alternative.

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Response to Comment C4-31

Thank you for your comment.

ECG, Inc.
January 20, 2003
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SCOPE OF WORK

The purpose of our services was to review selected portions of the DEIS on behalf of the City of Kenmore and the City of Lake Forest Park. The following is our scope of services:

1. Review selected sections of the DEIS,
2. Develop comments and questions based on our review, primarily focusing on aspects that potentially affect the Cities of Kenmore and Lake Forest Park,
3. Prepare a draft summary of our review,
4. Comment on adequacy of the DEIS with respect to the SEPA process,
5. Provide an opinion, based on our review, if there is a preferred alternative as it potentially affects Kenmore and/or Lake Forest Park.

As part of our services we reviewed the following sections:

Earth and Groundwater
Surface Water
Plants, Animals and Wetlands
Environmental Health
Land and Shoreline Use
Aesthetics
Light and Glare
Recreation
Cultural Resources

ELEMENT REVIEW

We reviewed the sections of the DEIS as listed above and developed comments and questions. Our specific comments and questions are presented in Attachment A. The following is a summary of some of our specific and/or most relevant comments or questions on a section by section basis to highlight key issues or for explanatory purposes.

EARTH AND GROUNDWATER

The Earth and Groundwater section characterizes the existing conditions adequately overall. However, we found some inconsistencies or lack of information. In addition, it is our opinion that some of the challenges, impacts and mitigation measures are not adequately developed.

C4-32 There is notably some discrepancy with respect to distances to faults (e.g. the South Whidbey Island fault and/or South Whidbey Island Fault Zone). This may be because different authors prepared different sections and referenced literature showing varying fault locations. If there are uncertainties, these should be so stated, but in all cases should be consistent. In addition, it may be useful to provide ranges of distances to the conveyance corridors. C4-33

C4-34 Some of the borings have been projected onto subsurface profiles from great distances (200 feet to over 3000 feet). While this may be acceptable in some situations, projecting borings even relatively short distances (e.g. 200 feet) may give a false impression about subsurface

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Response to Comment C4-32

Please refer to the response to the City of Kenmore, Comment C3-37.

Response to Comment C4-33

Please refer to the response to the City of Kenmore, Comment C3-38.

Response to Comment C4-34

Please refer to the response to the City of Kenmore, Comments C3-39.

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C4-34 conditions, no matter what caveats are placed on the figures. Also, a significant portion of the 195th Corridor lacks subsurface information. This makes it difficult to evaluate potential geologic materials and groundwater conditions relative to the proposed tunneling activities.

C4-35 A clear discussion about geologic hazards is not provided as they relate to each jurisdictions critical area ordinance (CAO). The text refers to low, medium and high landslide hazard, but the reader is not provided any definitions for low, medium and high hazards. While we understand that portal areas have not been selected, general areas have been identified. We recommend that

C4-36 mapping of geologic hazards should not be based solely on existing maps and should at least include reconnaissance-level information. This is particularly important since the earth element will have downgradient impacts on other elements (surface water, wetlands, aquatic habitat, etc.).

The DEIS identifies significant aquifers, but fails to identify the wellhead protection zone for the well field serving Lake Forest Park, located to the north of the proposed influent corridors and

C4-37 south of the 195th and 228th Effluent Corridors. We also recommend that a cross section be developed (oriented north-south) to show the relationship of the proposed conveyance options to the well field. Finally, there is no quantitative basis for the opinion that dewatering upgradient of the well field will not have impacts.

Many of the challenges that this project requires are not adequately addressed in the DEIS. This includes several portals over 300 feet in depth and at least one that may be as deep as 455

C4-38 feet (outside of Kenmore and Lake Forest Park). There was no discussion about salvaging tunnel boring machines (TBM) in place as part of design (see Brightwater Project Conveyance System Deep Tunnel Alternatives Peer Review Workshop, dated September 14, 2001) or because a machine could not be rescued. Impacts of dewatering have not been adequately addressed,

C4-39 especially with respect to the maintenance of the tunnel boring machines required every 200 to 400 feet.

C4-40 We have also recommended that tunneling methods be used that allow for grouting ahead of the tunneling machine to reduce impacts from dewatering requirements for construction, potential settlement, and groundwater depletion from aquifer leakage.

SURFACE WATER

C4-41 Impacts and mitigation to surface waters don't appear to be addressed very well. What will monitoring consist of? The impacts of erosion and sedimentation have not been quantified. Dewatering will result in a significant amount of water potentially being routed to surface waters. We recommend a baseline geomorphic survey of potentially affected streams prior to construction and regular monitoring during and after construction. The baselines and monitoring should include upstream and downstream assessments. In addition, potential mitigation activities should be identified. The surface water element has significant bearing on aquatic resources and essential fish habitat.

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Response to Comment C4-35

Chapter 4 of the Final EIS now provides a discussion of how the various locally based critical area ordinances (CAOs) have been referenced in order to identify documented geologic hazards in the various Brightwater System Alternatives. Some local jurisdictions defer to either Snohomish or King County CAOs, while other local jurisdictions have promulgated and are using their own CAOs. For consistency and uniformity in evaluating the alternatives for this Final EIS, the Snohomish and King County CAO references have been the primary ones used. During the permitting phases of the Brightwater System, local-specific CAOs, if different than either King or Snohomish County's, will be used as applicable and appropriate. Also, Chapter 4 provides definitions for the low, medium, and high levels of landslide hazards designations.

Response to Comment C4-36

Please refer to the response to the City of Kenmore, Comment C3-41.

Response to Comment C4-37

Appendix 6-B, Geology and Groundwater, of the Final EIS includes figures showing the Lake Forest Park wellhead protection area and includes two new approximately north-south cross sections showing inferred subsurface conditions in the area. Appendix 6-B also provides a quantitative analysis of impacts to groundwater from the proposed conveyance system. Please also refer to the response to Comment C4-8 in this letter.

Response to Comment C4-38

Please refer to the response to the City of Kenmore, Comment C3-43.

Response to Comment C4-39

Please refer to the response to the City of Kenmore, Comment C3-44.

Response to Comment C4-40

Please refer to the response to the City of Kenmore, Comment C3-45.

Response to Comment C4-41

Please refer to the response to the City of Kenmore, Comment C3-46.

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PLANTS, ANIMALS AND WETLANDS

C4-42 This section of the DEIS includes discussion of the existing conditions and some of the potential impacts from portal shaft construction activities. However, the project is so poorly defined at the present time that it is difficult to assess the actual potential impacts and the adequacy of potential mitigation measures. Most outstanding issues relate primarily to issues to be addressed under our questions and comments on the chapters for Earth and Groundwater and for Surface Water. However, more guidance could be provided with respect to restrictions or timing of flows from dewatering activities and noise and lighting impacts. We recommend that baseline and monitoring of aquatic habitat be completed in conjunction with geomorphic baseline and monitoring.

C4-43

LAND AND SHORELINE USE, AESTHETICS, LIGHT AND GLARE, RECREATION AND CULTURAL RESOURCES

C4-44 A primary shortcoming of the DEIS is that it neglects to summarize the Comprehensive Plans for Kenmore and Lake Forest Park and therefore may be in conflict. In addition, the DEIS does not reference local codes with respect to light and glare, or other goals as stated in the Comprehensive Plans. Proposed portals include shoreline areas, commercial areas including shopping centers, parks and school properties. There is a range in size of potential aboveground structures or whether some facilities will be below ground. These may include odor control facilities that "might" be constructed at portals along the influent corridor. We recommend that these odor control facilities be included to evaluate the "worst-case" scenario. This would affect the impacts and mitigation in the chapters for Land and Shoreline Use, Aesthetics, Air, and Light and Glare.

C4-45

Portal areas are likely to include impacts to view corridors, shoreline areas, impacts to sensitive lands and likely result in removal of trees that are valued in both communities. Park space and sensitive areas including streams and wetlands are located within a few of the potential portal siting areas. Consideration should be given for community goals and desires prior to final siting.

C4-46

In the chapter on Noise and Vibration, a typical diagram for construction at a portal shows noise dissipation from the portal area only. We have concerns that more of the site will be in use for construction, expanding the area affected by noise. This will have greater significance if construction extends into night hours. In addition, truck traffic noise and vibration will be a significant element, especially at night. The traffic-related noise and vibrations could have impacts on nearby residences as well as nearby wildlife habitat that should be elucidated rather than being passed off to the chapter on transportation.

C4-47

Cultural resource assessments have relied on King County records. Kenmore has not completed an inventory of structures, as compared with Bothell, where an inventory has already been completed. Therefore, the results of the inventory may be skewed and may not accurately reflect existing conditions.

C4-48

GeoEngineers File No. 0146-093-01

Response to Comment C4-42

Please refer to the response to the City of Kenmore, C3-47.

Response to Comment C4-43

Please refer to the response to the City of Kenmore, Comment C3-48.

Response to Comment C4-44

Please refer to the response to the City of Kenmore, Comment C3-12.

Response to Comment C4-45

Please refer to the response to the City of Kenmore, Comment C3-50.

Response to Comment C4-46

Please refer to the response to the City of Kenmore, Comment C3-51.

Response to Comment C4-47

Please refer to the response to the City of Kenmore, Comment C3-52.

Response to Comment C4-48

King County conducted a survey of historic buildings and structures in 1977 and 1978 that included Kenmore. In 1994, the Washington State Department of Transportation sponsored a study of transportation-related historic resources along Bothell Way in Kenmore. King County has also conducted a survey of portals within Kenmore for the Brightwater EIS and identified one building within Portal Siting Area 45 in the Draft EIS that may be eligible for listing in the National Register of Historic Places (NRHP), the Washington Heritage Register (WHR), and/or the King County Landmarks List (KCLL). However, this building is not within the present alternative portal sites within Portal Siting Area 45. King County also conducted additional

inventory and evaluation of historic buildings in support of the Final EIS. A cluster of buildings, known as the Twin Creeks Riding Stable, was identified in Portal Siting Area 44, and was recommended to be not eligible for listing in the NRHP, WHR, or KCLL by the King County Historic Preservation Program. Further discussion of the Twin Creeks Riding Stable is in Appendix 15-A, Cultural Resources: Historic Buildings and Structures, of the Final EIS.

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SUMMARY

C4-49 In general, it is our opinion that the DEIS lacks some existing conditions information and specificity as to the details of the project and the proposal. As a result, the DEIS lacks specificity with respect to impacts and mitigation. Many of the mitigation actions are to be addressed by "monitoring" and "appropriate mitigation measures", but no further discussion is provided. Examples are provided above and in Attachment A. In reading the DEIS and supporting

C4-50 documents, we have the impression that some portal areas are not decided on. Will portals potentially be located outside the portal siting areas shown in the DEIS?

C4-51 For the elements we reviewed, the majority of impacts within the city limits of Kenmore and Lake Forest Park will occur primarily at or in the vicinity of portal locations, but could potentially result in impacts to nearby waterways. Groundwater, however, could be impacted by tunneling, portal construction or from dewatering of aquifers by leakage into the conveyance facilities. Potential impacts to the Lake Forest Park Water District well field have not adequately been characterized. This is exemplified by the fact that the wellhead protection zone is not shown in the DEIS. Therefore, impacts and mitigation can't be adequately addressed.

C4-52 The DEIS fails to summarize Comprehensive Plans for either Kenmore or Lake Forest Park. Key elements and goals of the Kenmore and Lake Forest Park Comprehensive Plans should also be included in the project design and the Environmental Impact Statement.

C4-53 There is not a clear difference between the 228th and 195th Corridors, except that more impacts will occur in Kenmore and Lake Forest Park with the 195th Corridor option. The Unocal site offers the least amount of tunneling and the least amount of potential or likely impacts to the two cities. However, it also lacks the flexibility for overflow treatment and rerouting of flows that the Route 9 plant has.

C4-54 Although the deep tunnel gravity option reduces the potential for leakage into surrounding aquifers, the cost for construction are increased and offers a number of challenges. These challenges include deep and costly portal shafts, long tunnel bores at depths of over 300 feet and the difficulties associated with varying earth and water conditions. Whether the cost of pump stations required and the added maintenance and energy costs associated with pumping influent and/or effluent offsets the cost and maintenance of the deep gravity-flow tunnel is beyond our scope.

LIMITATIONS

This review has been prepared for use by City of Lake Forest Park and City of Kenmore and their consultant for evaluation of the Draft Environmental Impact Statement (DEIS) for Brightwater Regional Wastewater Treatment System, in King and Snohomish counties, Washington. This review is not intended for use by others, and the information contained herein is not applicable to other sites.

Our review of the DEIS has relied almost entirely on information provided in the DEIS and referenced technical appendices. It is possible that errors may exist in the information provided in

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Response to Comment C4-49

Without knowing what specific "existing conditions information" is being referred to in this comment, it is difficult to respond with any specificity.

Both the Draft EIS and the Final EIS include a reasonably thorough discussion of the probable significant adverse environmental impacts and reasonable mitigation measures for those identified impacts. The Draft EIS was issued at a point in time when a certain level of information was known relating to the probable significant adverse impacts of the proposal and possible ways to reasonably mitigate those impacts. In areas where there was uncertainty in relation to impacts in one respect or another, the Draft EIS presented, consistent with SEPA Guidelines, a worst-case analysis of impacts. The Draft EIS also indicated that ongoing analysis was under way and that additional information would be forthcoming in the Final EIS and otherwise. The purpose of a Final EIS is to respond to comments on the Draft EIS and, where appropriate, to provide additional or revised information and analysis relating to probable significant impacts of the proposal and reasonable mitigation measures. Since issuance of the Draft EIS in late 2002, considerable additional analysis has been conducted, as is the case on any large project, to further define and develop the proposal and to respond to Draft EIS comments. A number of the details requested in various comments in this letter relate to either information that does not involve probable significant adverse environmental impacts or information that is important prior to issuance of actual permits but may not be essential to include in an EIS. Additional analysis that has been conducted that relates to probable significant adverse impacts that will not be mitigated or regulated into non-significance is included as part of the Final EIS analysis.

Response to Comment C4-50

Generally, portals would be located within the portal siting areas designated in the Draft EIS. In a few cases where local agencies or landowners requested the consideration of other sites, those sites were also evaluated in the portal site screening and selection process for the Final EIS. In other cases, some portion of parcels identified and evaluated as candidate portal sites in the Final EIS may extend slightly outside of a designated portal siting area.

Candidate portal sites will continue to be evaluated after the Final EIS is issued. A final portal location will be selected as conveyance design continues once an alternative system is chosen.

Response to Comment C4-51

Please refer to the response to Comment C4-8 in this letter, and the response to the City of Kenmore, Comment C3-56.

Response to Comment C4-52

Please refer to the response to the City of Kenmore, Comments C3-12 and C3-57.

Response to Comment C4-53

For an updated comparison of project alternatives, please refer to Chapter 3 and Appendix 3-B, Project Description: Conveyance, of the Final EIS.

Response to Comment C4-54

Please refer to the response to Comment C4-23 in this letter for information on cost and economic issues.

these documents . Our review comments should not be construed as a guarantee of the accuracy or completeness of the documentation provided to us.

Within the limitations of scope, schedule and budget, our services have been executed in accordance with generally accepted geotechnical and engineering geology practices in this area at the time this report was prepared. No warranty or other conditions, express or implied should be understood.

We appreciate the opportunity to be of service to you. If you have any questions regarding our services, please contact either of us at (425) 861-6000.

Very truly yours,

GeoEngineers, Inc.

Craig F. Erdman, P.G.
Senior Geologist

Galan W. McInelly, P.G., C.E.G., C.HG.
Principal

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Attachments

ATTACHMENT A

CHAPTER 4 – EARTH AND GROUNDWATER

4.1 AFFECTED ENVIRONMENT

C4-55 4.1.1.3 ***Local Regulations***. Rating of landslide hazard areas oversimplified. What is the definition for low, medium and high landslide risk? Does not refer to King County, Lake Forest Park or Kenmore Critical Areas Ordinance definitions for erosion, steep slope and landslide hazards.

C4-56 4.1.2.1 ***Regional Geology***. Third paragraph, 6th line: Vashon Stade

C4-57 4.1.2.2 ***Regional Seismicity***. The South Whidbey Island Fault Zone as extrapolated on-land is closer than 2 miles to Route 9 site and the conveyance corridors Make sure descriptions of distances to faults agree in all sections subsequent (e.g., Route 9 site description states 6 miles to fault).

C4-58 4.1.4.3 ***Geologic Hazards***. Geologic hazards have not been field verified, even at a reconnaissance level, and are based on existing maps which cannot be relied on for fatal flaws. Please show geologic hazards for each portal based on County and/or local ordinance.

C4-59 4.1.4.4 ***Groundwater***. Fourth sentence of first paragraph: "The western portions of the conveyance corridors are...."

Figure 4-10: Does the size of arrows showing groundwater flow directions have any significance? Either explain significance or show all as same size.

4.3 IMPACTS AND MITIGATION

4.3.2 Conveyance Corridors

C4-60 Seismic hazards indicate potential for liquefaction near Lake Washington, Sammamish Slough and their tributaries. What about potential impacts to portal areas and shallow sections of tunnels or trenches relative to liquefaction and surface spreading?

C4-61 Consider grouting ahead of tunneling equipment as potential methods to help mitigate for settlement and groundwater depletion.

There may be difficulties coordinating ground surveys with tunneling operations, making it difficult to accurately intersect shields installed at portals. Consider grouting a 40- or 50-foot wide zone at portals instead of using a shield to provide greater latitude (in conjunction with grouting ahead of tunneling machines).

C4-62 Dewatering will be required to relieve pressure at the face of tunneling machines for servicing. Servicing is estimated to occur every 200 to 400 feet. What segments will likely

C4-63 require dewatering to accomplish the required servicing? Has this requirement been included in traffic analysis?

C4-64 Dewatering volumes for construction have been described as "low", but seems like dewatering during construction will be a significant element to adequately address. Further elaboration on specifics of dewatering are needed.

C4-65 Please elaborate on the monitoring for groundwater impacts and mitigation relative to aquifer dewatering.

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Response to Comment C4-55

Please refer to the response to the City of Kenmore, Comment C3-60.

Response to Comment C4-56

Thank you for your comment. The text in Chapter 4 of the Final EIS has been corrected.

Response to Comment C4-57

Please refer to the response to the City of Kenmore, Comment C3-62.

Response to Comment C4-58

Please refer to the response to the City of Kenmore, Comment C3-63.

Response to Comment C4-59

Please refer to the response to the City of Kenmore, Comment C3-64.

Response to Comment C4-60

Please refer to the response to the City of Kenmore, Comment C3-65.

Response to Comment C4-61

Grouting ahead of the tunnel boring machine is one method that would be available to the tunneling contractor to control groundwater seepage. Please refer to the response to the City of Kenmore, Comment C3-45, for additional information.

Response to Comment C4-62

Please refer to the response to the City of Kenmore, Comment C3-67.

Response to Comment C4-63

Please refer to the response to the City of Kenmore, Comment C3-68.

Response to Comment C4-64

Please refer to the response to the City of Kenmore, Comment C3-69.

Response to Comment C4-65

Please refer to the response to the City of Kenmore, Comment C3-70.

C4-66 How was it determined that potential impacts to downgradient wells would be low (relative to City of Lake Forest Park wells)? Please show the wellhead protection zone relative to conveyance corridors and provide a more complete evaluation of impacts and mitigation measures. How will the proposed tunneling and portal construction operations impact recharge areas? What are operational impacts and mitigation relative to recharge areas? Please show the wellhead protection zone for the Lake Forest Park well field.

C4-67 How will unanticipated soil and water contamination be addressed during tunneling and dewatering operations (specifically). What will monitoring consist of? What will be frequency and type of testing?

C4-68 Recommend including the lining of tunnels as plan element to reduce potential for leakage from force-mains or for groundwater infiltration into gravity lines.

C4-69 More discussion about impacts and mitigation from tunnel machine rescue shafts should be included. How will this be accomplished? What are impacts? What if this is under a regulated sensitive area?

CHAPTER 6 – SURFACE WATER

6.1 AFFECTED ENVIRONMENT

No comment.

6.2 IMPACTS

C4-70 6.2.1 ***Study Methodology.*** Limited site reconnaissance of portal and pump station siting areas was performed. Which sites were visited? What level of assurance is there that the site

C4-71 investigations are adequate with respect to the six criteria for assessing impacts on aquatic life presented on page 6-20?

6.2.2 ***Treatment Plant Sites***

C4-72 6.2.2.1 ***Erosion.*** What are the estimated volumes of sediment expected to impact surface water bodies during the projected six-year construction period for the treatment plant sites? A comparative evaluation of erosion impacts cannot be accomplished with the information provided.

C4-73 ***Dewatering.*** Use of injection wells to recharge dewatering groundwater would require treating the water to levels acceptable to Ecology. If this approach is chosen, how will this be accomplished? What quality controls will be implemented to prevent contaminated dewatering water from being injected into aquifers?

Unocal Site

C4-74 ***Erosion.*** Quantitative estimates of sediment volumes that could affect surface water associated with site grading and construction are not provided. Estimates of suspended sediment from barge dock construction are not provided.

C4-75 ***Dewatering.*** No quantitative evaluation of impacts to surface water bodies from dewatering is provided.

GeoEngineers A-2 File No. 0146-093-01

Response to Comment C4-66

Please refer to the responses to Comment C4-8 in this letter, and the response to the City of Kenmore, Comment C3-71.

Response to Comment C4-67

Please refer to the response to the City of Kenmore, Comment C3-72.

Response to Comment C4-68

Please refer to the response to the City of Kenmore, Comment C3-73.

Response to Comment C4-69

Please refer to the response to the City of Kenmore, Comment C3-74.

Response to Comment C4-70

Please refer to the response to the City of Kenmore, Comment C3-75.

Response to Comment C4-71

Please refer to the response to the City of Kenmore, Comment C3-76.

Response to Comment C4-72

Please refer to the response to the City of Kenmore, Comment C3-46.

Response to Comment C4-73

Please refer to the response to the City of Kenmore, Comment C3-78.

Response to Comment C4-74

Please refer to the response to the City of Kenmore, Comment C3-79.

Response to Comment C4-75

Please refer to the response to the City of Kenmore, Comment C3-78.

Route 9 Site

C4-76 ***Erosion***. Quantitative estimates of sediment volumes that could affect surface water associated with site grading and construction are not provided. Quantitative estimates of soil contaminants from erosion are not provided.

C4-77 ***Dewatering***. See comment under Unocal Site.

C4-78 ***Rerouting of Water Courses***. No quantitative estimates of sediment production to Bear Creek and Sammamish River are provided for relocation of water courses.

6.2.2.2 Operational Impacts

Unocal Site

C4-79 ***Emergency Outflows***. What are the estimated contaminant loads likely to occur in the event of an overflow for Puget Sound, Sammamish River and Lake Washington?

C4-80 ***Floods***. The text indicates that no consideration of possible tsunami impacts will be incorporated into the plant design, although facilities in coastal areas subject to tsunamis are being developed that incorporate tsunami mitigation measures.

6.2.3 Conveyance corridors

6.2.3.1 Construction Impacts

C4-81 ***Erosion***. See comments under Treatment Plant sites and Unocal site.

C4-82 ***Dewatering***. See comments under Treatment Plant sites and Unocal site.

C4-83 ***Dewatering***. How was the assessment of "no additional impacts" for streams receiving flows from dewatering activities determined?

C4-84 Table 6-5 for portal 10 refers to McAleer Creek as the primary receiving water, but maps and text indicate it is Lyon Creek within portal. Please clarify or correct. If both are affected, please say so.

6.2.3.2 Operational Impacts

C4-85 ***Emergency Overflows***. Is there a manual in-place for addressing emergency overflows for the current system? What are some of the sizes of previous emergency overflows? What has been the impact of these? What have monitoring and clean-up activities consisted of in the past? What would they likely consist of for this project?

C4-86 Is it preferable to route this to Lake Washington or to Sammamish River?

6.3 Mitigation

C4-87 Details on monitoring and mitigation are limited for streams, wetlands and water bodies near portals. Baseline studies should be accomplished for impacts assessment and monitoring during and after construction.

GeoEngineers A-3 File No. 0146-093-01

Response to Comment C4-76

Please refer to the response to the City of Kenmore, Comment C3-81.

Response to Comment C4-77

Please refer to the response to the City of Kenmore, Comment C3-78.

Response to Comment C4-78

Please refer to the response to the City of Kenmore, Comment C3-83.

Response to Comment C4-79

Please refer to the response to the City of Kenmore, Comment C3-84.

Response to Comment C4-80

Please refer to the response to The Washington Tea Party, Comments O14-18 and O14-20, as well as the response to the City of Kenmore, Comment C3-85.

Response to Comment C4-81

Please refer to the response to the City of Kenmore, Comment C3-86.

Response to Comment C4-82

Please refer to the response to the City of Kenmore, Comment C3-87.

Response to Comment C4-83

Please refer to the response to the City of Kenmore, Comment C3-88.

Response to Comment C4-84

Please refer to the response to the City of Kenmore, Comment C3-89.

Response to Comment C4-85

For Brightwater, an emergency response procedure has been established and is discussed in the response to the City of Kenmore, Comment C3-84. The preferred location of an emergency overflow is Puget Sound. For information regarding past overflows, please refer to the response to the Washington State Department of Natural Resources, Comment W3-117. For information regarding an existing manual that discusses emergency overflow, please refer to the response to the Washington State Department of Ecology, Comment W5-35.

Response to Comment C4-86

Please refer to the response to Comment C4-85 in this letter.

Response to Comment C4-87

Please refer to the response to the City of Kenmore, Comment C3-75, for a discussion of proposed baseline monitoring, the response to the City of Bothell, Comment C2-9, for a discussion of construction monitoring, and the response to the Washington State Department of Natural Resources, Comment W3-148, for a discussion of mitigation.

CHAPTER 7 – PLANTS, ANIMALS AND WETLANDS

C4-88 **General Comment:** The project is so poorly defined at the present time so that it is difficult to assess the actual potential impacts and the adequacy of potential mitigation measures. While it is the intent, as stated in the DEIS, to avoid sensitive areas and habitat, it is clear that disturbance or impacts to these areas can/will occur.

C4-89 7.1 Affected Environment

7.1.2.1 Page 7-11, first paragraph, 9th line, typo: "7intentional" [sic]

C4-90 7.1.3 Conveyance Corridors

The figures from the surface water section and habitat types such as "highly vegetated areas", "major water", "small streams" and "wetland boundaries" for each portal area. It would be helpful to show the recommended or required buffer areas on the maps.

C4-91 7.1.3.1 Page 7-36. Portal 11 indicates bald eagle nesting territory within 0.5 miles of the portal siting area.

7.2.3 Impacts

7.2.3.1 Construction Impacts

C4-92 ***Impacts common to both corridors***. Displacements of streams or filling of wetlands are "not anticipated", but further down text reflects that this might be a possibility. More specific details are needed in order to evaluate actual impacts and review adequacy of mitigation alternatives.

C4-93 See chapter on Surface Water

What about local codes with respect to tree removal?

Note that revegetation of trees and shrubs will take 5 to 25 years at portal sites as for treatment plant sites.

C4-94 7.2.3.2 Operational Impacts

Emergency Overflows. See comments about Emergency Overflows under Surface Water chapter.

7.3 Mitigation

C4-95 What does "minimize lighting for night work near surface waters and wetlands" mean? Is 1 lux at property lines as proposed in the "Light and Glare" section appropriate or should it be more stringent? What if project property line encroaches across surface waters or wetlands?

C4-96 What will monitoring and mitigation likely consist of in streams?

How will losses from emergency overflows be evaluated and mitigated?

C4-97 Provide mitigation actions in the DEIS, not by reference to technical appendices.

No mitigation recommendations are provided or evaluated relative to noise impacts to bald eagles (e.g. at Portal 11). Should there be restrictions during work day? Are there seasonal restrictions that should be provided?

GeoEngineers A-4 File No. 0146-093-01

Response to Comment C4-88

Both the Draft EIS and the Final EIS include a discussion of the probable significant adverse environmental impacts and the reasonable mitigation measures for these identified impacts beyond that characterized in this comment. Additional analysis that has been conducted and that relates to probable significant adverse environmental impacts to sensitive areas and habitat areas that will not be mitigated or regulated to a level of insignificance is included in Chapter 7 of the Final EIS.

Response to Comment C4-89

Thank you for your comment. The Final EIS text has been revised to correct for typos.

Response to Comment C4-90

Please refer to the response to the City of Kenmore, Comment C3-94.

Response to Comment C4-91

Please refer to the response to the City of Kenmore, Comment C3-95.

Response to Comment C4-92

Please refer to the response to the City of Kenmore, Comments C3-25 and C3-96.

Response to Comment C4-93

Please refer to the response to the City of Kenmore, Comment C3-97.

Response to Comment C4-94

Thank you for your comment.

Response to Comment C4-95

Please refer to the response to the City of Kenmore, Comment C3-99.

Response to Comment C4-96

Please refer to the response to the City of Kenmore, Comment C3-100.

Response to Comment C4-97

King County will comply with U.S. Fish and Wildlife Services and NOAA Fisheries requirements regarding protection of endangered species. Please refer to Chapter 7 of the Final EIS for more information on how impacts to plants and animals will be mitigated.

CHAPTER 9 – ENVIRONMENTAL HEALTH

C4-98 **General comment:** No mention is made in this section of the "Brightwater Conveyance System Hazardous Materials and Waste" technical memo by HDR Engineering dated June 26, 2002.

C4-99 General mention of potential sources of contaminated soil and water, whether known or not known at this time (e.g., heating oil tanks, PCB-containing transformer oil spills, former dry cleaners and gas stations, etc.) is warranted.

C4-100 9.2.3.1 Comment: Possible disruption during construction of contaminated soils or groundwater at portal siting areas **not mentioned. Reader should be at a minimum referred to Earth and Groundwater section**. Note: Spills or leaks from construction equipment (fuel and hydraulic fluid) and construction materials (e.g., concrete) mentioned and "*subject to onsite spill containment procedures consistent with the requirements of the local jurisdiction..*"

C4-101 Comment: What specific codes are applicable? What are procedures likely to consist of?

C4-102 9.2.3.2. Operational impacts caused by spills, leaks or other releases will be mitigated by "*designed [conveyance facilities] in accordance with all applicable Ecology and UFC requirements, which include spill prevention and containment... At portals, pump stations and at odor control facilities, onsite spills could enter the storm drainage system at the site.*"

Comment: Cite codes and regulations by number? What possible mitigation for potential spills into the storm drainage system?

C4-103 9.2.3.2 Although "*explosions in recently constructed conveyance systems are extremely rare*" (as a result of accumulated methane or hydrogen sulfide), "*special provisions to prevent gas buildup will be made because of the anticipated depths of tunnels and access facilities.*" "*Conveyance facility design will include measures to minimize hydrogen sulfide productions*" and "*all facilities... will be equipped with meters to monitor hydrogen sulfide. Manholes and pipelines will be manually opened or entered on a routine basis and inspected and monitored for hydrogen sulfide*"

Comment: No plan/measures provided for review.

C4-104 Page 9-25: Typos – paragraph 1: "...emergency overflows that would occur with (sic) the existing system... and paragraph 3 "...for both the Unocal and Route9 (sic) systems..."

C4-105 9.2.3.2 The DEIS cites need for the Brightwater project to "*reduce the frequency and volume of emergency overflow...if Brightwater were not built.*" Under the Brightwater system, "*a safety relief point would be located in Kenmore, near the existing Kenmore Pump Station. This safety relief point would discharge influent into the Sammamish River and/or Lake Washington.*" And "*discharge from the safety relief point would be very rare, the result of catastrophic events.*" These emergency overflows "*would result in increased concentrations of bacteria and toxicants.*" Mitigation proposed is to post signs to warn the public to avoid contact with the water, debris and sediments. "*King County would monitor water quality...and consider cleanup methods as appropriate*".

Comment: Who decides whether cleanup is appropriate, and what is appropriate?

GeoEngineers A-5 File No. 0146-093-01

Response to Comment C4-98

Please refer to the response to the City of Kenmore, Comment C3-102.

Response to Comment C4-99

Please refer to the response to the City of Kenmore, Comment C3-103.

Response to Comment C4-100

Please refer to the response to the City of Kenmore, Comment C3-104.

Response to Comment C4-101

Please refer to the response to the City of Kenmore, Comment C3-105.

Response to Comment C4-102

Please refer to the response to the Washington State Department of Natural Resources, Comment W3-120, and the response to the Washington State Department of Ecology, Comment W5-77.

Response to Comment C4-103

Please refer to the response to the City of Kenmore, Comment C3-107.

Response to Comment C4-104

Thank you for your comment. The text of the Final EIS has been revised to correct for typos.

Response to Comment C4-105

Please refer to the response to the Washington State Department of Ecology, Comment W5-35.

C4-106 9.2.6 *"The Brightwater project will significantly reduce environmental health risks compared to conditions without the facility. However increased wastewater flows accompanying regional growth (sic) population will contribute incrementally to increased environmental health risks in the region. King County will continue operation and maintenance practices to minimize this risk".*

Comment: Are the operation and maintenance practices existing? What are they?

C4-107 9.3.1.2 Comment: Cleanup of hazardous materials in accordance with MTCA and Washington State SMS cited in 9.3.1.2. Would like to see a discussion of what would happen if contaminated soil and groundwater are encountered during excavation. What will be the process to characterize? Will spot batch samples be obtained if no indication of contamination to verify field screening?

C4-108 9.3.1.1 Comment: Statement that air emissions will be in compliance with air quality standards. If nuisance odors are detected, even with odor control in use, what additional measures can/will be implemented?

CHAPTER 11 – LAND AND SHORELINE USE

C4-109 **General comment:** The comprehensive plans for the City of Lake Forest Park and the City of Kenmore are not summarized in the document (as for King and Snohomish Counties and other cities). The document should refer more directly to these plans and the critical elements contained in them. See Attachment B for some pertinent elements of these comprehensive plans, as well as referring to the documents themselves.

C4-110 **General comment:** The maps provided in Chapter 11 show zoning, but not public facilities, such as schools, city hall, parks, etc. Although included in the text, would also be helpful on the figures. Also, some lots are shown as "white" in the figure, but no explanation is given. Use of colors with more contrast or different line types would be helpful in differentiating between different

C4-111 characteristics (e.g. wetlands, highly vegetated areas, and smaller streams). Will low income housing be affected? Environmental Justice will be an element in National Environmental Policy Act process.

C4-112 **General comment:** This section should refer to the potential impacts of rescue shafts (as addressed in Section 4.3.2) and the dewatering wells (addressed in "Brightwater Conveyance System Conceptual Geotechnical Assessment" prepared by Shannon and Wilson and HWA Engineering, dated October 2002). Both measures likely will be conducted as field calls, yet the planning has to be in place to address all applicable codes and impacts. For example, the dewatering wells are estimated

C4-113 to be open from several days to weeks. Drilling the wells and maintaining the wells will have impacts. Additionally, no mention is made under impacts on the dewatering at the portal sites. Presumably, dewatering will require transporting water from the portal via hoses to sanitary sewer connections. Estimated dewatering will be of a few hundred to several thousand gallons per minute.

C4-114 The dewatering hoses could, at a minimum, cause traffic and access restrictions. Have these issues been considered in the traffic analysis?

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Response to Comment C4-106

Please refer to the response to the City of Kenmore, Comment C3-110.

Response to Comment C4-107

Please refer to Chapter 4 of the Final EIS that discusses the potential for encountering contaminated soil and groundwater, and potential mitigation options.

Response to Comment C4-108

For information on the odor prevention program and the monitoring that would be performed on the odor control system, please refer to the response to the Washington State Department of Transportation, Comment W2-5. Additional information about the wastewater treatment process and the odor control technology selected is provided in Appendix 5-A, Odor and Air Quality: Treatment Plant, of the Final EIS.

Response to Comment C4-109

Please refer to the response to the City of Kenmore, Comment C3-12.

Response to Comment C4-110

Public facilities are shown on Figures 17-1, 17-2, and 17-3 in Chapter 17 of the Draft EIS. A number of the graphics in Chapter 17 of the Final EIS have been revised to provide more clarity.

Response to Comment C4-111

Please refer to the response to the City of Kenmore, Comment C3-115.

Response to Comment C4-112

Please refer to the response to the City of Kenmore, Comment C3-116.

Response to Comment C4-113

Please refer to the response to the City of Kenmore, Comment C3-117. In addition it should be noted that Appendix 6-B, Geology and Groundwater, of the Final EIS includes a complete discussion on proposed groundwater control methods at portal locations, and Appendix 6-F, Groundwater and Stormwater Management at the Candidate Portal Sites, of the Final EIS addresses handling of groundwater removed from the portals.

Response to Comment C4-114

Please refer to the response to the City of Kenmore, Comment C3-68.

C4-115 11.1.1.5 Does summarize Comprehensive Plans for Kenmore and Lake Forest Park and may miss key elements.

C4-116 11.2 Notes on land use impacts: Section 11.1.3.1 addresses current land use. Note in Lake Forest Park, Portal Siting Area 7 (if necessary) includes inactive public school and Bruggers Bog/headwaters of west fork of Lyons Creek with residential development. Portal Siting Area 10 includes a commercial shopping center and residential use. In Kenmore, shoreline requirements along Sammamish River and Swamp Creek (both "urban" shoreline designations) subject to requirements under KCC 25.16.030. Portal Siting Area 34 includes residential, commercial, service, and recreation (including Swamp Creek Park and Sammamish River Trail), large tracts of vacant land and a hotel. Portal Siting Area 11 is commercial, retail, service, office and industrial uses.

Comment: Portal Siting Area 12 is indicated as located in Bothell on page 11-19, but is in Kenmore and King County.

Notes (continued): Land use in Portal Siting Area 12 is residential on large lots. Portal Siting Area 44 comprises large, vacant parcels or residential use, one farm and a mobile home park. (Westhill Park shown on the Thomas Bros. Guide in this portal siting area is not a public park.) Portal Siting Area 45 consists of residential, community (social and religious), office, Linwood Park and a private school.

C4-117 11.2.3.1 Although addressed in Section 11.2.2.1 (for treatment plant sites), and not in 11.2.3.1 (conveyance corridor construction impacts), construction will increase "*levels of dust, noise, odors and traffic associated with construction vehicles and machinery*" and "*could impact adjacent residential, commercial and recreational land use.*" Section 11.2.3.1 states that "*Brightwater facilities would be designed so that the portals or the pump station would be located on upland areas* [Comment: where possible?] *in order to avoid impacts to sensitive areas and resources.*" "*Detailed site evaluations would be conducted during the portal siting process to identify sites with the lowest potential land use impacts.*"

Comment: From whose perspective would the "lowest potential land use impacts" be made?

C4-118 11.2.3.1 Note: Worst-case, "*construction..could result in the displacement of up to 2 acres of existing land uses...only 1 to 2 acres of the 72-acre siting area would actually be required for construction.*" "*Existing uses would be replaced with a public facility use.*" "*...construction has the potential to displace some residences, businesses or recreational areas.*"

C4-119 11.2.3.1 "*Pipes will need to be installed to connect existing conveyance facilities to the new influent tunnels at Portal Siting Areas 10 and 11*"

Comment: The locations of these pipes, and presumably, the trenches required to install the pipes are not mapped.

GeoEngineers A-7 File No. 0146-093-01

Response to Comment C4-115

Please refer to the response to the City of Kenmore, Comment C3-12.

Response to Comment C4-116

Please refer to the response to the City of Kenmore, Comment C3-120.

Response to Comment C4-117

Please refer to the response to the City of Kenmore, Comment C3-121.

Response to Comment C4-118

Please refer to the response to the City of Kenmore, Comment C3-122.

Response to Comment C4-119

Please refer to the response to the City of Kenmore, Comment C3-123.

C4-120 11.2.3.1 Residents' impacts may include disruption of daily activities, disruption of sleep by daytime sleepers and impact by dust. "*Businesses... may have temporary delays to access caused by construction vehicles.*" "*Temporary impacts during construction could alter behaviors of local residents*".

Comment: Not specified as to what behaviors.

C4-121 Page 11-44: Typo, paragraph 4 – "...impacts would case (sic) when the project is completed."

C4-122 11.2.3.1 Note: "*Most of the tunneling impacts would not have significant land use impacts....*"

C4-123 11.2.3.1 Note: "*Construction would not be allowed within areas of the Sammamish River shorelines that are designated Conservancy.*" None shown on Figure 11-29.

C4-124 11.2.3.1 Notes on land use impact: At Portal Siting Area 7 (in Lake Forest Park) (optional), "*there are several large developed parcels with large areas of open space that could potentially accommodate a portal...; however, disruptions to businesses and adjacent residential areas would occur.*" A conditional use permit would be required within residential zones. "*Noise, and light and glare from nighttime construction activities has a greater potential to impact adjacent residences than less developed portal siting areas.*" At Portal Siting Area 10 (in Lake Forest Park), "*there are currently no parcels of vacant land large enough to accommodate a portal*" and "*dust, odor, noise and light and glare impacts to adjacent residences*" would result, and "*could also impact adjacent businesses.*" A conditional use permit would be required within residential zones. At Portal Siting Area 11 (in Kenmore), "*there are currently no parcels of vacant land large enough to accommodate a portal*" and "*surrounding land use is likely to be impacted by dust, odor, or noise generated by construction activities and traffic.*" At Portal Siting Area 12 (Kenmore), there is "much lower density than other siting areas...and other developed parcels "could accommodate a portal without displacing existing uses." Adjacent residences likely would notice "noise, light and glare from nighttime construction activities." At Portal Siting Area 34 (in Kenmore), there currently are 20 acres of undeveloped land and there are "*several developed parcels" with "adequate space to site a portal without displacing current uses.*" Dust, odor and noise would be generated during construction and "*nighttime construction activities would be noticeable from adjacent residential neighborhoods.*" Portal Siting Area 44 (in Kenmore) has 16 acres of vacant land. Portal Siting Area 45 (in Kenmore) has 5 acres of vacant land, but "*no single parcel is large enough to site a portal.*" "*Adjacent residential areas could be impacted by day and nighttime construction activities.*"

Comment: Presumably, portal siting in Portal Siting Areas 10 (in Lake Forest Park), 11 and 45 (both in Kenmore), will require condemnation procedures. The remaining portals (34 and 44) may not.

C4-125 Page 11-47: Alternative proposed on page 11-47 to microtunnel between Portal Siting Areas 10 and 11 because of higher development densities. "*A portal would not be constructed at Portal Siting Area 10 if microtunneling is selected.*" This paragraph discusses staging areas required nominally every 1,000 feet for microtunneling.

Comment: The impacts of staging areas every 1,000 feet are not discussed.

GeoEngineers A-8 File No. 0146-093-01

Response to Comment C4-120

Please refer to the response to the City of Kenmore, Comment C3-124.

Response to Comment C4-121

Thank you for your comment. The text in the Final EIS has been revised.

Response to Comment C4-122

Thank you for your comment.

Response to Comment C4-123

Please refer to the response to the City of Kenmore, Comment C3-127.

Response to Comment C4-124

Thank you for your comment.

Response to Comment C4-125

Please refer to the response to the City of Kenmore, Comment C3-129.

C4-126

11.2.3.2 Operation impacts in 11.2.3.2: "*at the completion of the project, the portal areas could be restored and made available for other uses; they could be surplused and developed by future owners; or permanent odor control, ventilation, and/or tunnel access facilities could be located at the sites.*" "*High quality wetlands, streams, and other sensitive areas will be avoided where possible.*" "*It is not expected that portals would significantly influence the character of surrounding areas or how the surrounding areas would develop in the future.*" "*The majority of portals will be at grade structures that would not be noticeable from surrounding areas. At some locations, permanent odor control, ventilation and/or tunnel access facilities would be constructed. Potential noise and odor impacts would be mitigated through facility design, and facilities would be designed to blend architecturally with surrounding land uses.*"

Comment: When will it be known what and where permanent odor control, ventilation, and/or tunnel access facilities could be located? Without more information on this, as well as whether structures are at grade, partially buried or below grade, all potential impacts cannot be assessed at this time.

C4-127

General Note: "*King County has committed to mitigating identified impacts of Brightwater by providing amenities or incentives to the host jurisdiction and to minimize public costs.*" "*Mitigation 'shall be at least 10 percent of the costs associated with new facilities…'*" Mitigation proposed includes public notice of construction hours, "*utilization of technologically efficient equipment and processes that minimize odors, noise and dust; and notification of impacts to roadways.*" "*King County will work with local jurisdictions to meet or exceed development requirements and minimize potential impacts to surrounding land uses.*" (See Ch. 5, 10, 12, 13 and 16).

Comment: Need specific statement of what the construction hours will be. In addition, no alternative mitigation is proposed.

C4-128

11.3.1 "*King County would implement Best Management Practices during construction and operation of facilities.*"

Comment: Citation of BMPs?

C4-129

11.3.4 "*Portals and any permanent aboveground facilities would be sited to avoid displacing existing land uses when feasible…For facilities sited adjacent to residential areas, King County would work with local jurisdictions to ensure that appropriate buffers and facility design are implemented to minimize impacts .In commercial areas, King County would develop construction traffic plans in accordance with local permits that minimize impacts to local businesses.*"

Comment: Grammar: Permits do not provide a means; perhaps right-of-way permitting procedures do.

GeoEngineers A-9 File No. 0146-093-01

Response to Comment C4-126

Please refer to the response to the City of Kenmore, Comment C3-130.

Response to Comment C4-127

Please refer to the response to the City of Kenmore, Comment C3-131.

Response to Comment C4-128

Please refer to the response to the City of Kenmore, Comment C3-132.

Response to Comment C4-129

The text has been corrected in the Final EIS to read: "King County would develop construction traffic plans in accordance with local permitting requirements including street use permits that minimize impacts to local businesses."

CHAPTER 12 – AESTHETICS

C4-130 **General Comment:** The overall language of the DEIS contains language that is not specific and lacks defined commitment to mitigation. Language should be stronger in terms of "adopt" rather than "develop", "will" instead of "may", "will be" versus "probably would be". Be clearer about what is will be done.

12.1.1 Note: "*Guidelines for construction of new, above-ground structures along the conveyance corridors are found in municipal or zoning codes of local jurisdictions.*"… Lake Forest Park and Kenmore "*implement specific design guidelines for the appropriate height, bulk, landscaping, setbacks/buffers, fences, and signage of, or accomodating new structures according to the appropriate zoning designation of the property.*" "*…key evaluative frameworks" include "site setting, view corridor and viewpoint*"

12.2.3.1 Note: "*Potential visual impacts would largely be concentrated at portal siting areas,…where surface disruption associated with construction would occur. Short-term aesthetic impacts would occur where conveyance facilities are constructed…' "Construction sites could present temporarily significant aesthetic alterations, particularly if portal sites are closely surrounded by residential or commercial development. Aesthetic impacts of below-ground construction could include large pits, piles of soil, site lighting, and construction equipment and removal of existing mature vegetation or structures on the construction site*"

C4-131 Page 12-15: Typo, paragraph 5 – "impact at each site would depend onsite (sic) conditions."

12.2.3.1 Note: "*King County will coordinate with local jurisdictions to develop applicable requirements for the design of construction sites and permanent facilities.*" May include "*building design standards and setbacks; scale, character, and qualities of adjacent and surrounding land use; removal of mature forest, garden, or street vegetation; or disruption of the visual continuity of the streetscape, or area character*"

12.2.3.2 "*There would be minimal long-term aesthetic impacts to surrounding communities*" at portal sites, "*depending on what is removed from the site during construction. Some portals would require access panels set into concrete slabs, which would be visible from the immediate site.*" "*Some portal sites would have permanent above-ground structures. Such …facilities… probably would be located adjacent to, but not within view corridors. Apart from removal of vegetation, and potential structures at these sites, the impacts to the view corridor would be minimal.*" "*Odor control structures are the only common permanent above-ground structures along the conveyance corridors.* [Comment: What about the possible ventilation and tunnel access structures.] *They could be as small as 100 square feet or as large as 1,600 square feet, and would be sited below ground, partially buried, or above ground depending upon site-specified requirements. Such permanent facilities would be designed to blend aesthetically with the surrounding neighborhood*".

C4-132

12.3.2.1 Note: Mitigation listed in Section 12.3.2.1: within roadways, fencing during construction; replace affected surface to "*meet or exceed existing conditions*"; at portal areas during construction, leave a buffer of existing vegetation, place fencing or other "*visual barriers to the construction sites.*" Portal facilities would be designed differently, depending on the "*local context.*" Long-term mitigation would include "*landscaping the surface, as appropriate to the specific site.*"

Response to Comment C4-130

Please refer to the response to the Washington State Department of Natural Resources, Comment W3-166.

Response to Comment C4-131

Thank you for your comment.

Response to Comment C4-132

Please refer to the response to the City of Kenmore, Comment C3-136.

CHAPTER 13 – LIGHT AND GLARE

C4-133 **General comment:** No site specific studies have been completed at portal sites. These are needed to evaluate impacts and develop appropriate mitigation.

CHAPTER 14 – RECREATION

C4-134 **General comment:** No existing parks are within the portal siting areas located in Lake Forest Park.

14.1.2 "*Where surface construction is needed for pipelines, a 40-foot-wide construction zone would be needed, and this would follow public rights-of-way, when possible. Where a surface structure such as a portal or pump station is proposed in a park or open space area,...impacts could result. At the completion of the conveyance corridor, portals would be between 50 and 90 feet in diameter and could either be located above or below ground. If the structure is located above ground in a recreational area, up to approximately 0.2 acre of the recreational facility could be permanently displaced.*"

C4-135 Comment: What factors will determine whether a structure is below ground or above ground?

14.1.2.1 Note: "*The Burke-Gilman/Sammamish River Trail passes through Portal Siting Area 11, the location of the new pump station, in the City of Kenmore. This popular trail is used for walking, jogging, bicycling and rollerblading*" (Section 14.1.2.1). This trail is a regional trail that extends from Seattle, around the north end of Lake Washington, to Marymoor Park in Redmond.

14.1.2.2 Existing parks, recreation and open spaces listed in Section 14.1.2.2 include the Sammamish River Trail in Portal Siting Area 11, the Sammamish River Trail and Swamp Creek Park in Portal Site Area 34 (both in Kenmore). Linwood Park is located within Portal Siting Area 45 in Kenmore.

14.2.3.1 Note: During construction, "*impacts could include closure of a portion of the park area, loss of parking spaces, detour of trails, and construction-related traffic delays. Depending upon the location of the portal site, temporary impacts associated with traffic, noise, dust and odor from construction activities could affect adjacent recreational areas.*"

14.2.3.1 Note: After construction, "*the sites may be landscaped and restored to pre-construction conditions, or may be converted to new recreational areas minus the area required for any proposed structure. At completion, portals would be between 50 and 90 feet in diameter and could either be located above or below ground.*" "*The siting of portals would attempt to avoid impacts to parks and recreational facilities; however, this may not always be possible*".

C4-136 Page 14-15: Typo, paragraph 1 – "*Bruggers Bog Park in the City of Lake Forest Park falls within this portal siting area.*" This park is not located in Lake Forest Park, although part of the wetlands system associated with Bruggers Bog (headwaters of the west fork of Lyons Creek) is in Lake Forest Park.

GeoEngineers A-11 File No. 0146-093-01

Response to Comment C4-133

Please refer to the response to the City of Kenmore, Comment C3-137.

Response to Comment C4-134

Thank you for your comment.

Response to Comment C4-135

Please refer to the response to the City of Kenmore, Comment C3-139.

Response to Comment C4-136

Chapter 14 of the Final EIS has been revised to indicate that Bruggers Bog Park is within the City of Shoreline.

14.2.3.1 In Portal Siting Area 11, "*if an area within the immediate vicinity of the trail [Sammamish River Trail] were selected for a portal or pump station, detour routes along the trail would be provided and clearly marked during construction. If an area within the trail right-of-way were selected as a portal or pump station site, the trail would be modified to accommodate the structure. Construction of the new Kenmore pump station could take up to 3 years*"

C4-137 Comment: What is the construction period for the portal areas?

14.2.3.1 Also at Portal Siting Areas 10 and 11, "*in addition to the portal construction areas, open cut construction, jack and bore, and/or microtunneling methods, which would cause above-ground disruption, would be required to connect existing wastewater conveyance pipelines to the influent tunnel*".

C4-138 Comment: Routes not shown on figures.

Note: At Portal Siting Area 34, "*a portal in this siting area has the highest potential to affect recreational facilities of all potential portal siting areas considered.*" *Approximately 16 acres of recreational features are included within the 72-acre siting area* [Sammamish River Trail and Swamp Creek Park].

Note: At Portal Siting Area 45 (Kenmore), "*approximately 0.5-acre of Linwood Park falls within the portal siting area. Areas disrupted could include parking areas and lawn/picnic areas...*"

14.2.3.2 "*At the completion of the project, typical portals would occupy up to two acres in size and would be either designed as at-grade slabs, possibly with secured tunnel access facilities, restored to pre-construction conditions, or turned into new recreational areas. Some portals eventually may contain above-ground buildings housing ventilation and/or odor control equipment... Since the exact locations of the air handling facilities at each portal site has not been determined,...discussion represents a worst-case scenario*". Comment:

C4-139 What if odor control fails the nuisance threshold? Additionally, initial impacts may assume no structure, yet "eventually" a structure may be placed. Overall impacts cannot be assessed at this time unless the number and types of structures are known.

14.3.1 Mitigation listed in Section 14.3.1 includes site selection to avoid and/or minimize impacts to recreational facilities when feasible; public notice of construction dates and routes; temporary detour routes for the Burke-Gilman/Sammamish River Trail; incorporate site safety and security measures at construction sites; temporarily move recreational activities; replace a recreational facility at another location of needed; minimize storage of heavy equipment and construction materials on park property; blend permanent facilities with adjacent properties; implement aesthetic controls (landscape buffers and setbacks, noise control dampers and buffers, and odor control facilities); coordinate with recreational service providers.

C4-140 Comment: Should potential alternate sites for displaced recreation be addressed now? Both cities have relatively little vacant land.

14.4.2 "*If taking an existing recreational facility is unavoidable, appropriate compensation would be implemented at the completion of construction.*"

C4-141 Comment: State here who decides the "appropriate compensation."

GeoEngineers A-12 File No. 0146-093-01

Response to Comment C4-137

Please refer to the response to the City of Kenmore, Comment C3-141.

Response to Comment C4-138

Please refer to the response to the City of Kenmore, Comment C3-123.

Response to Comment C4-139

Please refer to the response to the City of Kenmore, Comment C3-143.

Response to Comment C4-140

Please refer to the response to the City of Kenmore, Comment C3-144.

Response to Comment C4-141

Acquisition of any portal site property involve a written offer of "just compensation" from the King County Wastewater Treatment Division (WTD) to the property owner. The value is determined based on fair market value by an independent real estate appraiser. Each appraisal report is also reviewed by an independent review appraiser to assure that appraisal standards are met. The property owner is given the opportunity to consider and respond to the offer. Once an agreement is reached, the purchase and sale agreements are signed; the property owner is paid when ownership transfers to King County at the close of escrow.

Along the conveyance alignment where King County will be using deep tunneling machines, surface property impacts would be minimal. Nonetheless, King County will be obtaining underground easements. For properties directly above where the tunnel would be located, property owners would receive an offer of "just

compensation" from WTD for the determined impacts. The subsurface value is determined by an independent real estate appraiser and is also reviewed by an independent review appraiser. Once an agreement is reached, legal documents (which detail the rights and responsibilities of both parties) are drafted, reviewed, signed, and recorded. After completion, the property owner is paid accordingly. Please refer to the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 and the King County Property Acquisition and Relocation Web site at http://dnr.metrokc.gov/wtd/row/acquisition.htm for more information.

CHAPTER 15 – CULTURAL RESOURCES

15.1.1.3 "*City of Lake Forest Park maintains an inventory of historic buildings and structures but has not passed a historic preservation ordinance.*" "*City of Kenmore has not passed historic preservation ordinances and has not conducted a formal survey of historic buildings and structures.*"

C4-142 Comment: The DEIS relied on King County records for Kenmore.

Note: "*Influent portion of the Route 9 corridor generally has high probabilities for hunter-fisher-gatherer, ethnographic period, and historic period archaeological resources because of the proximity of the floodplains to the Sammamish River and other streams and to the north shore of Lake Washington*".

15.1.3.2 Note: Stated in Section 15.1.3.2, "*there are 128 recorded historic buildings and structures along the influent portion of the Route 9 corridors.*" Two buildings were evaluated for listing, but are not located within portal siting areas. "*Twelve of the 128 historic buildings [or structures?] are in portal siting areas but none of these buildings or structures have been evaluated for listing in a historic register.*"

C4-143

Note: Stated in Section 15.1.3.2, "*there are 31 recorded historic buildings and structures along the 228th Street corridor. Eight of the 31 properties have been evaluated for their eligibility for listing*...[all in Bothell]". "*Thirteen of the 31 inventoried historic buildings are in the portal siting areas*...," including nine that have not been evaluated for significance.

C4-144

Note: "*Hunter-fisher-gatherers probably fished, hunted, and collected plants on the upper reaches of the small streams that flowed in to the north end of Lake Washington. ...Swamp Creek [was] known and used by the Duwamish, Sammamish, and Snohomish groups*". Comment: See page 4A-3 of City of Kenmore Comprehensive Plan (delete "probably" from first line). This could be an important element for the National Environmental Policy Act process, specifically as it relates to Section 106.

C4-145

Note: Stated in Section 15.1.3.2, "*there are 32 recorded historic buildings and structures along the 195th Street corridor,*" including four located in portal siting areas. None of these four has been evaluated for significance.

Note: "*Descriptions of buildings observed during the preliminary survey and areas that may require further inventory are provided for the three final conveyance corridors*..." (Section 15.2.1).

C4-146 Comment: ...since there is little preliminary historic building information for Lake Forest Park and Kenmore on which to base a decision at this time. The inventory is needed to adequately evaluate the presence of historic buildings prior to portal site selection.

C4-147 15.2.3.1 Question: Does the statement in 15.2.3.1, first paragraph, second sentence contradict Section 15.1.3?

15.2.6 "*King County's commitment to protect and preserve cultural resources where possible would help to diminish adverse effects to cultural resources resulting from constructing and operating the project*"

C4-148 Comment: "Commitment" can be relative.

GeoEngineers A-13 File No. 0146-093-01

Response to Comment C4-142

Please refer to the response to Comment C4-48 in this letter.

Response to Comment C4-143

Chapter 15 of the Final EIS has been revised. The 12 properties referenced do not include any additional structures, other than buildings.

Response to Comment C4-144

Thank you for your comment. Each of the eight buildings referenced is in Bothell.

Response to Comment C4-145

Thank you for your comment. Deletion of "probably" from text would make the statement inaccurate.

Response to Comment C4-146

Please refer to the response to Comment C4-48 in this letter.

Response to Comment C4-147

Chapter 15 of the Final EIS has been revised. The statements do not contradict; however, the text has been revised to clarify the intent of the statement, and to make distinctions between influent and effluent portions of the conveyance alternatives.

Response to Comment C4-148

Thank you for your comment.

C4-149

15.3.2.2 Note: Mitigation listed in Section 15.3.2.2 includes develop archaeological treatment and monitoring plans; inventory and evaluation of uninventoried and unevaluated historic buildings and structures; monitor construction near historic buildings and structures for ground settling and/or vibration; monitor construction in areas with "high probability for archaeological deposits"; develop a Programmatic Agreement to ensure compliance with Section 106 of the National Historic Preservation Act.

Comment: These all require additional study prior to construction or professional monitoring during construction. Not much preliminary information for Lake Forest Park and Kenmore on which to base a decision at this time. Also, areas with "high probability" based on conclusions in Table 15-6?

C4-150

15.3.1.1 "*Adverse effects to the archaeological materials would be mitigated through data recovery... mitigation through data recovery may cause construction delays or works stoppages.*" "*If an uninventoried building or structure may be significant, then evaluation of significance would be undertaken prior to moving or demolition. Typical mitigation of adverse effects to eligible historic properties requires photographic and written documentation...prior to moving or demolition of properties*".

Comment: Does not address potential environmental issues in the event of moving or demolishing a structure (such as lead-based paint and asbestos-containing building materials).

C4-151

15.3.2.3 Note: Portal Siting Areas that would require additional field reconnaissance in Lake Forest Park and Kenmore are 10, 11, 34, 44 and 45. Also, unevaluated historic buildings would be evaluated in Portal Siting Areas 34 and 45.

GeoEngineers A-14 File No. 0146-093-01

Response to Comment C4-149

King County and the Washington State Department of Transportation have conducted historic building surveys in Kenmore as described in the response to Comment C4-48 in this letter. King County and Lake Forest Park conducted historic building surveys in Lake Forest Park in 1977-78 and 1996, respectively. Previous survey efforts were supplemented through inventory and evaluation of portal siting areas and treatment plant sites in support of the Final EIS. The inventory of historic buildings in support of the Final EIS identified a cluster of buildings, known as the Twin Creeks Riding Stable, in Portal Siting Area 44. The King County Historic Preservation Program recommended the Twin Creeks Riding Stable to be ineligible for listing in the National Register of Historic Places (NRHP), Washington Heritage Register (WHR), or King County Landmarks List (KCLL). Further discussion of the Twin Creeks Riding Stable is included in Appendix 15-A, Cultural Resources: Historic Buildings and Structures, of the Final EIS.

Studies conducted for the Final EIS and archaeological fieldwork conducted during the design and predesign phase have provided data for development of treatment and monitoring plans and a programmatic agreement.

High probability areas for archaeological resources have been based on conclusions presented in tables in Chapter 15 of the Final EIS.

Response to Comment C4-150

Prior to demolition of structures on treatment plant or candidate portal sites, a licensed abatement company would remove any materials containing asbestos or lead in accordance with Washington Industrial Safety and Health Act (WISHA) requirements. Disposal of hazardous materials would be at licensed sites and would be

thoroughly documented. Abatement activities are expected to be minimal and would be completed by small crews of certified workers as needed. No significant site impacts are anticipated during abatement activities. Please refer to Appendix 3-G, Construction Approach and Schedule, of the Final EIS.

Response to Comment C4-151

Please refer to the response to Comment C4-48 in this letter.

ATTACHMENT B

City of Lake Forest Park Comprehensive Plan, Revised Draft dated November 21, 2002

The following includes portions of the Comp. Plan that are applicable to the following DEIS elements: environmental health, land and shoreline use, aesthetics, recreation and cultural resources. In a general sense, the City of Lake Forest Park concern for existing vegetation (size and type), the limited area where services are located (primarily in Lake Forest Park Shopping Center – a portion of which is located within Portal Siting Area 10) and need to not lose any residential or commercial space) are the most obvious conflicts with siting any of the aboveground Brightwater facilities within Kenmore. Construction of Portal Siting Area 10 is likely to be disruptive of the service core and city administrative activities in the City of Lake Forest Park (for about two years?).

- Page 15: "The community is known by the high degree of visibility of its mature Douglas firs, hemlocks and maples. In addition, numerous homes have mature fruit trees dotting their landscapes."
- Page 16: "The community has limited service industries, many of which are located in the Lake Forest Park Shopping Center."
- Vision Statement No. 6: "Lake Forest Park values high standards for public and private development. The City will encourage development that minimizes impact to the environment and urban design that is in harmony with natural and neighborhood surroundings" (page 17).
- Vision Statement No. 7: "Lake Forest Park values regional solutions to regional issues. The City will work together with surrounding jurisdictions to further our shared local and regional interests while maintaining the autonomy to advance local interests on behalf of its citizenry" (page 17).
- The Comprehensive Plan is based several major findings, including the following: "Lake Forest Park residents want the city to retain its forest-like character; and new development needs to be sensitive to the existing single-family character of the community and Lake Forest Park's sensitive areas such as wetlands, shorelines, steep slope and landslide hazard areas and streams" (page 18).
- There are 136 vacant acres in the city; after subtracting for sensitive areas and market factors, there are 61 vacant acres (page 22).
- In the Comp Plan, the second Town Center alternative would include the expansion of the Town Center concept to create an urban village, and would include the existing Town Center and property directly to the west: increased density and housing opportunities would result. (page 22). Question: We understand that this option is still under consideration. Impacts to an urban village from construction/operation of Portal Siting Area 10 and any permanent structures within the portal siting area should be considered.
- "Multi-family dwelling units are generally mid-scale apartment complexes with two to five stories and low rise condominiums" (page 24).
- "…there is virtually no capacity for additional commercial development within the city, unless it is achieved through redevelopment of existing commercial properties or changes to the future land use and zoning maps" (page 30).

- "Further residential development is limited to infill and redevelopment and will be the primary methods used to achieve the City's housing goals" (page 30).
- One of city zones is "public facility" which includes wastewater facilities (page 34).
- Pol LU 1.5: "Preserve and display its rich history by implementing ordinances, interlocal agreements and administrative procedures to assure identification, protection and preservation of historic landmarks, landmark sites and districts. Landmark designation, with appropriate inclusion in the county, state and federal registers of historic places, is encouraged" (page 34).
- Pol LU 2.6: "...land use regulations..include performance standards for the following: a) signage and lighting which is compatible with adjacent land uses; b) open space...; c) setback lines; d) landscaping; e) building height and bulk; f) impact on adjacent properties; g) streetscape improvements; h) parking lot landscaping and configuration; i) bicycle lanes; and j) sidewalk width" (page 36).
- Pol LU 2.7: "Enhance vitality and visual interest of mixed use, commercial, business and other areas by providing incentives for the inclusion of open space, water features, public art, planters, courtyards and other public amenities" (page 36).
- Goal LU 4: "Encourage the development of the Town Center as the City's commercial core, oriented between a mix of commercial and potential residential uses and pedestrian linkages between uses" (page 37).
- Policy LU 4.7: "Development at the Town Center should be consistent with the character of Lake Forest Park...development aspects that will be reviewed shall include building façade articulation, entries, landscaping, buildings, pedestrian amenities, and building height" (page 37).
- Goal LU 5: "Balance the need to provide an adequate amount of land for housing with the desire to maintain the City's forested, residential character and unique natural sensitive areas,...utilities..." (page 37).
- "Protection of remaining wetlands function and conditions is necessary and restoration should be encouraged when where (sic) feasible" (page 40).
- "Because part of the City relies on ground water as its source of potable water, protection of the aquifer is particularly important" (page 42).
- No shorelines of the state in Lake Forest Park except Lake Washington (page 43).
- Ecological goals, including streams, wetlands, water, air and vegetation stated on p. 46-50. Including Pol EQ 6.3: "Define, identify and protect significant trees and other vegetation within Lake Forest Park" (page 50).
- "Special needs housing is a unique requirement for the City to address. Special needs housing includes senior housing and group homes...approximately one-third of the city's residents will be over 65 in the next twenty years and may desire to live in more affordable, lower maintenance residences...should also be located near service provides (sic), such as shopping and medical and dental offices.." (page 58).
- Pol HS 5.2: "...Ensure that residential neighborhoods and developments are adequately buffered from noise, odors, traffic and other environmental stresses of development" (page 62).
- Pol ED 5.3: "Locate public facilities and programs in Town Center" (page 68).

- Pol ED 6.2: "Improve visual appearance of all commercial development with landscaping, art, maintenance and design" (page 68).
- Pol ED 6.3: "Promote diversity of commercial development, civic and cultural uses at Town Center" (page 68).
- "Lake Forest Park has its own police force serving the city…station is currently located at City Hall at the Lake Forest Park Town Center" (page 88).
- Pol EF 1.2: "Establish a process for reviewing proposals for siting essential public facilities..include requirements that siting of proposed public facilities be reviewed for compatibility with adjacent land uses and those land uses designated on the future land use map, particularly residential neighborhoods and city centers…The City's siting process may include requirements that facilities provide amenities or incentives to the neighborhood as a condition of approval" (page 97).
- Pol UT 4.2: "Construction, operation and maintenance of utility structures and improvements should be consistent with resource conservation and best management practices according the to the Washington Department of Ecology" (page 116).
- Pol UT 4.5: "Where possible, require joint use of transportation rights-of-way and utility corridors" (page 116).
- Surface water management goals on p. 116- 117, including TESC.
- City of Lake Forest Park Wetlands and Landslide Areas Map: landslide hazard area and wetlands in Portal Siting Area 7. Lyon Creek flows through Portal Siting Area 10.

Lake Forest Park Municipal Code: Title 16, Environmental Protection (revised 06/02):
Codes likely applicable to the proposal:

16.06: State Environmental Act Implementation
16.08: Land Clearing and Grading
16.14: Tree Protection and Replacement
16.16: Environmentally Sensitive Areas
16.18: Development Standards in Environmentally Sensitive Areas, includes exemptions
16.24: Drainage Plans
16.26: Land Use Decisions Procedures

City of Kenmore Comprehensive Plan dated March 2001

The following includes portions of the Comp. Plan that are applicable to the following DEIS elements: environmental health, land and shoreline use, aesthetics, recreation and cultural resources. In a general sense, the City of Kenmore vision for parks/open space/natural environment elements to remain unchanged is the most obvious conflict with siting any of the aboveground Brightwater facilities within Kenmore.

- 20-year vision: "parks/open space/natural environment would be the primary feature that respondents hope never change" (page 2-4).

- The vision statement includes the following: "a community that actively protects natural and environmentally sensitive areas, significant open space, and trees; a community with a network of parks, trails, open spaces, and recreational facilities providing for passive and active recreation, and waterfront access" (page 2-7).
- Page 4A-3: "numerous arrowheads were found by early settlers at the mouth of the Sammamish River along Lake Washington." And "along Lake Washington and the mouth of the Sammamish River are 'areas known to contain large numbers of sites.'" And "it's possible that there are unknown archaeological sites in Kenmore due to its lake and river frontage and low elevations."
- "A relatively small portion (9 percent) of the City's land is vacant. Although some land is vacant due to property owner preferences, some is likely vacant due to environmental constraints such as wetlands, flood hazards, or steep slopes" (page 4A-11).
- Question: Where is the Downtown – Community Special District? And Downtown – Master Plan Development Special District? (page 4A-18). Will it be impacted?
- LU-2.3.7 – Sponsor a study of the Swamp Creek area wetland, stream corridor, and associated habitat? (page 4A-22).
- Objective 3.2: "Promote the preservation of significant historic and archaeological sites and structures." (page 4A-25).
- We understand that the LakePointe development discussed in Section 4B-1 currently is on hold. The development is located along the influent corridor, but not within a portal siting area. As planned before, the project includes over 650,000 square feet of commercial/office/hotel development and 1,200 housing units (page 4B-1). If the project goes forward during Brightwater facilities construction, there will be a combined impact to the City of Kenmore from both large projects.
- Policy LU-7.1.5: "Provide appropriate resources towards building and zoning code enforcement to help ensure sufficient structure and site quality and maintenance" (page 4C-2). Comment: DEIS does not address structure and site long-term maintenance.
- Objective 10.1: "Protect natural and environmentally sensitive areas, open space, trees, vegetation, natural terrain, and drainage" (page 4C-5).
- Policy LU-10.1.5: "Promote preservation of existing and provision of new view corridors, consistent with the Parks, Recreation, and Open Space Element, particularly Objectives 39.4 and 39.5 and their associated policies" (page 4C-6).
- Policy LU-10.2.1: "Continue to require tree retention plans for development and redevelopment proposals in Kenmore" (page 4C-6).
- Policy LU-10.2.3: "Require development to retain substantial trees and include substantial landscape materials to achieve noticeable biomass" (page 4C-6).
- Note: Swamp Creek is a Class 1 stream (with a 100-foot buffer) (page 4D-6 and 4E-1).
- Objective 13.5: "Adopt an urban forestry strategy to encourage the preservation and planting of trees on public and private property" (page 4D-20).
- Policy LU-13.6.2: "Allow development within designated Shoreline Environments that preserves the resources and ecology of the water and shorelines, avoids natural hazards, promotes visual

and physical access to the water and preserves archeological resources, traditional cultural resources, and navigation rights" (page 4D-21).

- Policy LU-14.2.1: "Require land uses permitted in mapped Erosion Hazard Areas to minimize soil disturbance and maximize retention and replacement of native vegetative cover" (page 4D-21). Comment: erosion hazards areas within Portal Siting Areas 7, 10 and 44.
- Policy LU-14.2.2: "Require new development to protect natural vegetation coverage at levels sufficient to moderate surface water runoff and erosion and to protect the integrity of stream channels. When revegetation is required, appropriate native vegetation should be used" (page 4D-21).
- Policy LU-14.2.3: "Require grading and construction activities to be conducted with erosion control Best Management Practices and other development controls as necessary to reduce sediment discharge from construction sites to minimal levels" (page 4D-21).
- Note: Kenmore uses the King County Shoreline Master Program (on an interim basis). Applies to Class 1 streams and other State shorelines. In Kenmore, includes Lake Washington, Sammamish River, and Swamp Creek, plus associated wetlands (page 4E-1). The shorelines, as indicated in the DEIS figure 11-29, are Urban designations.
- Objective 16.7: "Unique and fragile areas of the shoreline should be protected from uses or activities that will have an adverse effect on the land or water environment" (page 4E-4). Question: Are these delineated?
- Objective 16.8: "Non-residential uses or activities which are not shoreline dependent should be encouraged to locate or relocate away from the shoreline" (page 4E-4).
- Policy LU-18.6.2: "New developments should minimize visual and physical obstruction of the water from shoreline roads and upland owners" (page 4E-7).
- Policy LU-19.1.1: "Unique and fragile areas in shoreline areas should be designated and retained as open space. Access and use should be restricted or prohibited when necessary for their preservation" (page 4E-8). Question: Are these delineated?
- Objective 19.4: "Scenic, aesthetic and ecological qualities of natural and developed shorelines should be recognized and preserved as valuable resources" (page 4E-8).
- Policy LU-19.4.2: "In shoreline areas, the natural topography should not be substantially altered" (page 4E-9).
- Policy LU-19.4.3: "Shoreline structures should be sited and designated to minimize view obstruction and should be visually compatible with the shoreline character" (page 4E-9).
- Policy LU-19.5.4: "Any structure or activity in or near the water should be constructed in such a way that it will minimize adverse physical or chemical effects on water quality, vegetation, fish, shellfish or wildlife" (page 4E-9).
- Objective 21.1, including Policy LU-21.1.1 and LU-21.1.3 through LU-21.1.5: "Public and private cooperation in site preservation and protection should be encouraged" (page 4E-11).
- Objective 21.4, including Policy LU-21.4.1 through LU-21-4.3: "the need to provide clear interpretation of historic/cultural sites to visitors should be recognized" (page 4E-12). Comment: Not addressed in DEIS.

- Policy LU-24.1.2: "…Uses which are neither shoreline dependent or water oriented should be discouraged except for residential" (page 4E-15).
- Policy LU-24.1.3: "Emphasis should be given to developing visual and physical access to the shoreline in the Urban Environment."
- Policy LU-24.1.7: "Aesthetic considerations should be actively promoted by means of sign control regulations, architectural design standards, planned unit development standards, landscaping requirements and other such means" (page 4E-15).
- Policy LU-24.2.8: "Development should not significantly degrade the quality of the environment, including water quality and air quality, nor create conditions which would accentuate erosion, drainage problems or other adverse impacts on adjacent Environments" (page 4E-16).
- Policy LU-24.12.4: "King County should be consulted prior to or at the time of application for construction of regional utility facilities to be located in or along shorelines or wetlands" (page 4E-21).
- Policy LU-24.12.5: "Utility corridors crossing shorelines of the state should be encouraged to consolidate and concentrate or share right-of-way…" (page 4E-22).
- Policy LU-24.12.6: "Public access consistent with public safety and security should be encouraged where rights-of-way for regional utility facilities cross shorelines of the state" (page 4E-22).
- Policy LU-24.12.7: "New utility facilities should be located so as neither to require extensive shoreline protection nor to restrict water flow, circulation or navigation" (page 4E-22).
- Policy LU-24.12.8: "Utility facilities and rights-of-way should be selected to preserve the natural landscape and minimize conflicts with present and planned used of the land on which they are located" (page 4E-22).
- Policy LU-24.12.9: "New utility routes should be designed to minimize detrimental visual impact from the water and adjacent uplands" (page 4E-22).
- Proposed improvement to Linwood Park provided on page 7-3 and page 7-14.
- Proposed improvement to Swamp Creek Park provided on page 7-5.
- Policy P-39.5.1: "Retain view corridors in existing rights of way, recreational areas and regional trail corridors…by requiring adjacent new developments to provide visual access" (page 7-18).
- Page 10-10 addresses the Regional Wastewater Comprehensive Plan.
- Policy U-48.1.8: "Through memorandums of understanding or other methods, ensure the implementation of the County's Regional Wastewater Comprehensive Plan results in full mitigation of siting, construction, and operational impacts of new or expanded facilities in Kenmore" (page 10-13).
- Policy U-48.1.11: "Ensure the implementation of the County's Regional Wastewater Comprehensive Plan …minimize failures, overflows, and contamination affecting the City's surface waters" (page 10-13).

MEMORANDUM

To:	Chuck Price ECG, Inc.	Date:	January 11, 2003
From:	Milton Lim	TG:	02353.00
Subject:	Brightwater DEIS – Transportation Section Comments		

This memorandum summarizes our review of the Brightwater Wastewater Treatment project DEIS. The review focuses on potential impacts to transportation facilities in the cities of Kenmore and Lake Forest Park.

Construction Schedule

The duration of construction activity at each tunnel portal location would range from two to five years (DEIS page 3-29, Table 3-5). The following measures may need to be considered in order to account for the relatively long construction period:

C4-152

- A mitigation measure identified in the DEIS states that streets impacted by construction will be restored to pre-existing or better conditions (DEIS page 16-54). Due to the long multi-year construction period, the need to restore streets may need to be evaluated and implemented periodically during the construction period.

C4-153

- As a temporary condition that would occur only during construction, the anticipated construction truck volumes at the portal sites of 48 truck trips per day (DEIS page 16-37 Table 16-16) may not typically warrant any mitigation. However, due to Brightwater's long construction period, measures to mitigate truck access during construction may be necessary, particularly for local non-arterial streets which are not generally designed to accommodate significant truck volumes over a longer period of time. Such measures may include strengthened pavement to accommodate the truck weights and additional pavement widths to accommodate larger turning radius requirements.

Construction Portal Locations

C4-154

- The DEIS indicates that access routes for construction of the portals would generally follow existing interstates, state routes, and major arterials (DEIS page 16-44). It should be noted that the 195th Corridor Alternative has two portal sites, 44 and 45, that are located away from the major arterial street

The Transpo Group page 1

Response to Comment C4-152

Please refer to the response to the City of Kenmore, Comment C3-156.

Response to Comment C4-153

Please refer to the response to the City of Kenmore, Comment C3-157.

Response to Comment C4-154

Please refer to the response to the City of Kenmore, Comment C3-158.

C4-154

network. Access to these portal sites during construction will add significant truck traffic to 61st Avenue and 80th Avenue. Mitigation measures may be needed to accommodate the added truck traffic on these streets, which currently do not function as primary truck routes.

C4-155

- Specific locations for the tunnel portals have not yet been identified. Locations for the tunnel portals are identified in the DEIS as 2,000-foot diameter (72 acres) areas within which 1 to 2 acres would be selected as the actual site for the portal (DEIS page 3-11). When the actual portal sites are determined, additional analysis should be conducted to identify impacts to the adjacent street system. If the portals are located adjacent to local non-arterial streets, improvements may be required to accommodate truck access for construction.

C4-156

Open Cut Construction

Open cut construction methods would be used in construction of the conveyance system for special crossings, to connect the new tunnel with existing pipes, and to relocate existing utilities along the conveyance corridors. The DEIS notes that the typical lengths of the open cut segments would vary from several hundred to 2,000 feet (DEIS page 3-29 Table 3-5). As a result, the open cut trenches could potentially impact significant lengths of roadway and property along the conveyance corridors. Measures required to mitigate the impacts could include:

- Measures to maintain vehicular and pedestrian access to and from adjacent properties during construction.
- Limiting lengths of open cuts.
- Phasing and sequencing construction to avoid or minimize concurrent lane or road closures on multiple streets.

The Transpo Group page 2

Response to Comment C4-155

Please refer to the response to the City of Kenmore, Comment C3-159.

Response to Comment C4-156

Please refer to the response to the City of Kenmore, Comment C3-160.

Economic & Fiscal Impacts of the Proposed Brightwater Wastewater Treatment System on the Cities of Kenmore and Lake Forest Park

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January 13, 2003
January 16, 2003 (revised)

Economic & Fiscal Impacts of the Proposed Brightwater Wastewater Treatment System on the Cities of Kenmore and Lake Forest Park

Executive Summary

- King County is proposing to build a new wastewater treatment system, called Brightwater, to meet the region's long-term wastewater treatment needs. The Brightwater system would include a secondary wastewater treatment plant; the associated pipelines, pump stations, and other facilities that make up a conveyance system to transport wastewater to and from the plant; and an outfall to discharge effluent into Puget Sound.

- The treatment facility would provide additional capacity in 2010 to treat 36 million gallons per day (mgd) of wastewater. It would also produce biosolids for application on forestry and agricultural lands as well as highly treated water for non-drinking uses, such as landscape irrigation. Construction of the Brightwater system is scheduled to begin as early as 2004 and be completed with the system online in 2010.

- The preferred alternative site for the Brightwater secondary wastewater treatment plant (WWTP) is along State Route 9 in unincorporated Snohomish County, just north of the city limits of Woodinville. The associated preferred conveyance corridor includes both an influent pipeline extending from existing pipelines in Lake Forest Park, Kenmore and Bothell to the treatment plant site; and an effluent pipeline from the treatment plant site to an outfall in Puget Sound.

- The influent pipeline would follow a corridor of 7.8 miles from the intersection of Ballinger Way NE and NE 178th Street in Lake Forest Park, along Bothell Way NE near the northern end of Lake Washington to the intersection with NE 83rd Street before heading northeast through Bothell into Snohomish County to the treatment plant. The proposed influent pipeline traverses Lake Forest Park and Kenmore for a distance of 0.75 miles and 2.88 miles respectively.

- The effluent pipeline would follow a corridor of 12.5 miles that extends from the treatment plant to NE 195th Street, traversing the Cities of Kenmore and Lake Forest Park to Ballinger Way NE (State Route 104). At this intersection, the corridor turns northwest along Ballinger Way NE to NE 205th Street in Shoreline before heading into the Puget Sound. The effluent pipeline traverses Kenmore and Lake Forest Park for a distance of 2.88 miles and 1.5 miles respectively.

- The purpose of this study is to present results of an economic and fiscal impact analysis of the Brightwater conveyance system for two jurisdictions—City of Kenmore and City of Lake Forest Park.

- Construction of the conveyance system—both tunnels and portals—has potentially significant economic and fiscal implications for the Cities of Kenmore and Lake Forest Park. In particular, the study poses this principal question: what is the stream of revenues and economic effects of constructing and operating the Brightwater wastewater treatment conveyance system within the Cities of Kenmore and Lake Forest Park? Related, are there any associated deleterious impacts on existing business activity and residences within the conveyance system?

- This study is not a complete fiscal impact analysis. Rather, it is limited to considering major tax revenues generated from direct construction-related activities, namely revenues generated from direct construction outlays. The revenue sources considered by the analysis consist of the property tax, sales and use tax, and real estate excise tax, and utility tax. Since the study is limited to an evaluation of revenues directly associated with construction of the conveyance system, the other major component of a fiscal study, namely costs or expenditures is not presented here.

- In addition, the study presents findings on the economic effects—employment and earnings—of only the construction of the conveyance system. Construction of the Brightwater wastewater conveyance system will have "ripple" effects throughout the regional economy and within the Cities of Kenmore and Lake Forest Park. Operation of the conveyance system is expected not to have any significant effects.

Recent History of Revenues in the City of Kenmore and the City of Lake Forest Park

- Like most municipalities in the state, the Cities of Kenmore and Lake Forest Park derive a large share of its revenues from the property tax and sales tax. Local revenues dominate both Cities' general funds, with intergovernment sources declining precipitously between 2000 and 2003.

- For the City of Kenmore, property tax is the dominant revenue source for its general fund of $7.2 million (proposed 2003 budget, operating revenue), followed by utility tax and sales tax. The property tax is expected to contribute $2.71 million or 38 percent to the City's general fund in 2003. Sales tax is expected to contribute $1.05 million or 14.5 percent of the City's total operating revenue.

- In the City of Lake Forest Park, property tax accounts for 50 percent of general fund revenues, followed by sales tax and utility tax. The property tax is expected to contribute $2.46 million of its total $4.93 million operating revenue for 2003. Sales tax is expected to contribute $490,000 or 10 percent of the City's total operating revenue.

Proposed Brightwater Wastewater Treatment Conveyance System—Project Description and Construction

- The 195th Street conveyance system for the preferred Brightwater plant site consist of a number of components:
  1. An influent pipeline for carrying untreated wastewater to the plant;
  2. An effluent pipeline for carrying treated wastewater from the plant;
  3. A pump station to lift the wastewater to higher elevations so that it can continue to flow by gravity (depending on the alternative selected);
  4. Portals to provide access for tunneling equipment during pipeline construction and for pipeline maintenance after construction; and
  5. An outfall pipeline in Puget Sound with a diffuser at the end to mix the treated wastewater with water currents in the Sound.

- These conveyance tunnels will be placed within a 1,000-foot-wide corridor of land whereas portal siting areas are 72-acre (2,000-foot-diameter) areas within which 1-2 acres would be selected for construction of the portals. Portals will serve as staging areas and access points for tunnel construction. Six of the total ten portals on the preferred influent and effluent pipeline corridors are located within the City limits of Lake Forest Park (2 portals) and Kenmore (4 portals).

- The total construction cost for the conveyance system alone (assuming the Force Main/Gravity Tunnel, the preferred system) is estimated at $728 million in 2002 dollars, (*Brightwater Treatment System, Cost Estimates for the Brightwater Systems, Information Handout, November 16, 2002*). These cost outlays have in turn been distributed over the 2005-2008 timeframe of construction of the conveyance system.

- Construction labor along the conveyance system is estimated at a level of 360 workers during the peak construction period. Truck drivers would add an additional 50 – 60 workers. Combined, the total peak construction workforce is estimated at 410 – 420 workers. These workers will be engaged along the entire conveyance system, 40 percent of which lies within the City of Lake Forest Park and the City of Kenmore.

Economic and Fiscal (Revenue) Impacts Associated with the Brightwater Conveyance System

- The primary focus of the analysis of economic impacts related to the Brightwater conveyance system is on the employment and earnings generated during the construction phase. It is expected that there will be minimal economic effects once the conveyance system becomes fully-operational. Employment here is measured in terms of full-time-equivalents for construction.

- Several worker categories including construction workers, machinery and equipment installation workers, and architectural, engineering, and administrative (A/E&A) workers are included in the direct worker totals.

- Peak year employment in 2006 was estimated at 214 workers of whom about 70 percent are in construction occupations. These workers have an estimated average annual salary of $55,100. Construction of the conveyance system during the 2005-2008 time period is expected to result in additional employment of upwards of 200 workers within the region. In other words, for every construction worker on the conveyance system there is another 0.92 workers hired in other businesses within the region.

- Given the existing mix of businesses and the commutation patterns of heavy construction workers, few businesses will gain from the increased construction activity within the two Cities. Only a modicum of direct construction workers is expected to reside within the two Cities. The current base of economic activity within Kenmore and Lake Forest Park suggest that most purchases of needed supplies and materials for construction will be made outside of the immediate Cities.

- Constructing the conveyance system will require millions of dollars worth of materials and supplies. Only a modest amount of these materials and supplies will be purchased from local vendors located within the Cities of Kenmore and Lake Forest Park. The expected increase in sales tax revenues for these two cities is listed in the below table. Over the four-year period, the expected increase in sales tax collections for these two Cities is estimated at be less than $50,000 in 2002 dollars.

Sales Tax Revenues due to Brightwater Conveyance System Construction, 2005-2008

City	*2005*	*2006*	*2007*	*2008*	*Cumulative Total*
Lake Forest Park	$1,800	$2,100	$1,600	$1,200	$6,700
Kenmore	$11,300	$13,300	$10,100	$7,900	$42,600
Total, combined Cities	$13,100	$15,400	$11,700	$9,100	$49,300

With the exception of two portal staging areas, most of the portals have been sited within areas of residential property or open space. The exceptions are the influent portals #10 (located at the intersection of Ballinger Way NE and NE 178th Street) and #11 (located at the intersection of Bothell Way NE and NE 66th Street). Both of these areas encompass major shopping districts in Lake Forest Park and Kenmore. Obviously, the specific final location for these portals could adversely affect existing retail trade and service establishments within Kenmore and Lake Forest Park. In order to minimize adverse economic impacts, planners will need to locate the staging areas for these two portals away from these major shopping districts. Increased truck traffic associated with these two portals may be associated with a decline in shopping trips to these retail districts. However, given the imprecise location of these staging areas, potential economic impacts can not be quantified.

Economic & Fiscal Impacts of the Proposed Brightwater Wastewater Treatment System on the Cities of Kenmore and Lake Forest Park

Introduction

King County is proposing to build a new wastewater treatment system, called Brightwater, to meet the region's long-term wastewater treatment needs. The Brightwater system would include a secondary wastewater treatment plant; the associated pipelines, pump stations, and other facilities that make up a conveyance system to transport wastewater to and from the plant; and an outfall to discharge effluent into Puget Sound. The treatment facility would provide additional capacity in 2010 to treat 36 million gallons per day (mgd) of wastewater. It would also produce biosolids for application on forestry and agricultural lands as well as highly treated water for non-drinking uses, such as landscape irrigation. Construction of the Brightwater system is scheduled to begin as early as 2004 and be completed with the system online in 2010.

The preferred alternative site for the Brightwater secondary wastewater treatment plant (WWTP) is along State Route 9 in unincorporated Snohomish County, just north of the city limits of Woodinville. The associated preferred conveyance corridor includes both an influent pipeline extending from existing pipelines in Lake Forest Park, Kenmore and Bothell to the treatment plant site; and an effluent pipeline from the treatment plant site to an outfall in Puget Sound. The effluent pipeline would follow a corridor that extends from the treatment plant to NE 195th Street, traversing the Cities of Kenmore and Lake Forest Park to Ballinger Way NE (State Route 104). At this intersection, the corridor turns northwest along Ballinger Way NE to NE 205th Street in Shoreline before heading into the Puget Sound.

Study Purpose and Scope

The purpose of this study is to present results of an economic and fiscal impact analysis of the Brightwater conveyance system for two jurisdictions—City of Kenmore and City of Lake Forest Park. Construction of the conveyance system—both tunnels and portals—has potentially significant economic and fiscal implications for the Cities of Kenmore and Lake Forest Park. In particular, the study poses this principal question: what is the stream of revenues and economic effects of constructing and operating the Brightwater wastewater treatment conveyance system within the Cities of Kenmore and Lake Forest Park? Related, are there any associated deleterious impacts on existing business activity and residences within the conveyance system?

This study is not a complete fiscal impact analysis. Rather, it is limited to considering major tax revenues generated from direct construction-related activities, namely revenues generated from direct construction outlays. The revenue sources considered by the analysis consist of the property tax, sales and use tax, and real estate excise tax, and utility tax. Since the study is limited to an evaluation of revenues directly associated with construction of the conveyance system, the other major component of a fiscal study, namely costs or expenditures is not presented here. In addition, the study presents findings on the economic effects—employment

and earnings—of only the construction of the conveyance system. Construction of the Brightwater wastewater conveyance system will have "ripple" effects throughout the regional economy and within the Cities of Kenmore and Lake Forest Park.

Recent History of Revenues in the City of Kenmore and City of Lake Forest Park

Like most municipalities in the state, the Cities of Kenmore and Lake Forest Park derive a large share of its revenues from the property tax and sales tax. Tables 1 and 2 indicate revenues by source generated by the City of Kenmore and the City of Lake Forest Park for the years 2000 through 2002 and projected (or proposed) for 2003.

Table 1. City of Kenmore Historical Revenues, General Fund 2000-2003 (current dollars)

Revenue by Source 2000-2003	*FY 2000 Actual*	*FY 2001 Actual*	*FY 2002 Revised*	*FY 2003 Proposed*
Local sources				
Property tax	$2,326,168	$2,577,510	$2,632,530	$2,709,430
Sales tax	$949,316	$1,149,678	$1,045,000	$1,045,000
Criminal justice 1/10 sales tax	$361,688	$369,720	$358,000	$358,000
Utility tax	$879,836	$988,519	$1,065,000	$1,140,500
Gambling tax	$583,242	$572,535	$600,300	$600,300
Other taxes	$767,189	$3,000	$2,600	$2,600
Cable franchise fees	$142,911	$104,192	$137,000	$151,200
Building permits	$80,420	$198,327	$247,000	$259,250
Other licenses and permits	$5,793	$17,112	$4,500	$4,500
Land use fees-residential	$388,880	$184,466	$170,200	$178,710
Land use fees-commercial	$141,723	$296,648	$210,000	$310,000
Preapplication fees	$16,306	$10,607	$6,000	$6,000
Plan review fees	$41,155	$76,500	$98,000	$102,900
Other charges for services	$118,456	$195,668	$73,200	$70,000
Subtotal, local sources	**$6,803,083**	**$6,744,482**	**$6,649,330**	**$6,938,390**
Intergovernmental sources				
State grants	$76,980	$44,650	$57,960	$55,700
Recycling grants	$43,826	$43,260	$58,000	$58,000
Motor vehicle excise tax	$45,215	$0	$0	$0
Equilization allocations	$780,445	$0	$0	$0
Liquor excise tax	$56,098	$61,675	$63,000	$67,320
Liquor board profits	$104,188	$98,813	$100,000	$96,480
Other intergovernment revenues	$7,306	$6,080	$6,450	$6,300
Subtotal, intergovernment sources	**$1,114,058**	**$254,478**	**$285,410**	**$283,800**
Total operating revenues	**$7,917,141**	**$6,998,960**	**$6,934,740**	**$7,222,190**
Beginning fund balance	$2,376,691	$4,291,486	$6,787,820	$2,497,460
Interest & interfund transactions	$292,136	$1,379,060	$1,424,200	$511,250
Total available revenues	**$10,585,968**	**$12,669,506**	**$15,146,760**	**$10,230,900**
Per capita	$567	$674	$790	
Population	18,678	18,790	19,180	Not available

Sources: City of Kenmore, Finance Department; Washington State Office of Financial Management (population).

Revenues presented here are from only the Cities' General Fund; other funds—Special Funds (such as Street Fund and Drainage Utility Fund), Debt Service Fund, and Capital Funds are not included. As shown in the tables, local revenues dominate total general revenues by source (excluding beginning fund balances and interest earnings). The pattern has not changed significantly since 2000, even though intergovernmental revenues have precipitously declined during the period.

Table 2. City of Lake Forest Park Historical Revenues, General Fund 2000-2003 (current dollars)

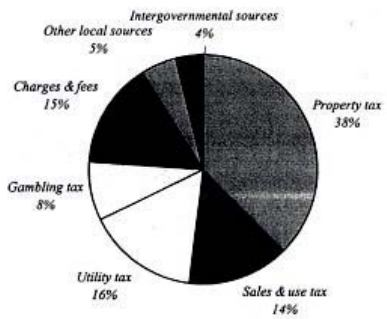
Revenue by Source 2000-2003	*FY 2000 Actual*	*FY 2001 Actual*	*FY 2002 Revised*	*FY 2003 Proposed*
Local sources				
Property tax	$2,253,394	$2,316,025	$2,440,636	$2,461,726
Sales tax	$464,673	$495,211	$491,582	$490,000
Criminal justice 1/10 sales tax	$274,721	$266,741	$245,714	$240,000
Business tax	$116,830	$139,717	$153,558	$145,000
Admission tax	$16,281	$17,349	$18,254	$15,000
Utility tax	$299,405	$385,330	$414,890	$460,000
Gambling tax	$0	$1,142	$799	$800
Other taxes	$1,894	$1,671	$1,527	$1,500
Cable franchise fees	$71,682	$126,812	$109,821	$120,000
Building permits	$150,383	$163,195	$179,143	$160,000
Other licenses and permits	$184,948	$190,563	$279,682	$251,000
Other charges for services	$417,265	$329,196	$391,910	$359,500
Subtotal, local sources	**$4,251,475**	**$4,432,951**	**$4,727,515**	**$4,704,526**
Intergovernmental sources				
State grants	$4,081	$2,671	$33,750	$15,997
Recycling grants	$14,857	$14,151	$19,795	$19,795
Motor vehicle excise tax	$1,344,683	$897,932	$311,000	$0
Equilization allocations	$221,521	$0	$0	$0
Liquor excise tax	$42,609	$44,419	$44,000	$44,000
Liquor board profits	$79,136	$71,229	$72,118	$75,000
Other intergovernment revenues	$93,062	$49,494	$65,361	$71,416
Subtotal, intergovernment sources	**$1,799,949**	**$1,079,895**	**$546,024**	**$226,208**
Total operating revenues	**$6,051,424**	**$5,512,846**	**$5,273,539**	**$4,930,734**
Beginning fund balance	$382,919	$1,737,703	$2,156,817	$1,369,588
Interest & interfund transactions	$220,423	$202,327	$241,336	$198,594
Total available revenues	**$6,654,765**	**$7,452,877**	**$7,671,691**	**$6,498,916**
Per capita	$517	$578	$597	
Population	12,871	12,889	12,860	na

Note: na is not available
Sources: City of Lake Forest Park, Finance Department; Washington State Office of Financial Management (population).

Out of total operating revenues projected for 2003 in the City of Kenmore, 38 percent will come from property tax collections (Figure 1). The property tax base (taxable assessed valuation) for the City of Kenmore in 2003 (projected) tax collections stands at $2.71 million, substantially up from $2.3 million in 2000. (The City's property tax levy rate for 2002 was 1.8500 per $1,000 assessed valuation.) Property tax collections increased by 5.4 percent per annum between 2000 and 2003, as shown in Table 1.

The sales and use tax[1] contributed $1.05 million or 14.5 percent of total revenues by source in 2003. As shown in Table 1, taxes from this source increased over the recent period at 3.3 percent per annum. The City's sales tax rate is 0.85 percent of taxable sales (1.0 percent less 0.15 percent distributed to King County). Sales tax distributions for criminal justice are made on a population-weighted basis from countywide collections.

Figure 1. General Revenues by Major Source, City of Kenmore, FY2003 Budget



Source: City of Kenmore, Finance Department.

Utility taxes, aggregated for all utilities (electrical, gas, telephone), represent the next largest tax source at $1.14 million in 2002, increased from $879,800 in 2000, for an annual average rate of growth of 9.9 percent. Tax collections from this source represented 16 percent of total operating revenues by source.

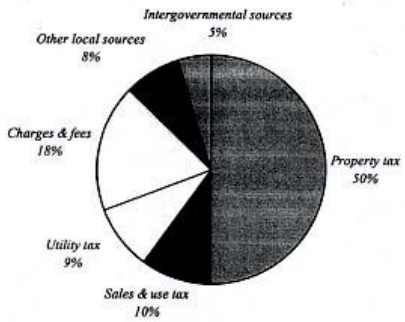
Total available revenue (general fund) to the City of Kenmore, including funds from beginning fund balance, interest and interfund transactions, are budgeted at $10.23 million in 2002. This amount represents a decline of only 3.35 percent below the City's 2000 level of $10.59 million; but almost a third reduction from 2002 revised total available revenues of $15.15 million.

[1] Retail sales tax is paid by the purchaser based on the selling price of tangible goods and certain services; the use tax is paid by the user on which no sales tax was paid, for example on goods purchased from sellers located in other states.

For the City of Lake Forest Park, half of total operating revenues projected for 2003 will come from property tax collections (Figure 2). The property tax base (taxable assessed valuation) for the City of Lake Forest Park in 2003 (projected) tax collections stands at $2.46 million, moderately up from $2.25 million in 2000. (The City's property tax levy rate for 2002 was 1.7538 per $1,000 assessed valuation.) Property tax collections increased by 3.1 percent per annum between 2000 and 2003, as shown in Table 2.

The sales and use tax contributed only $490,000 or 9.9 percent of total operating revenues by source in 2003. As shown in Table 2, taxes from this source slightly increased over the recent period at 1.8 percent per annum. The City's sales tax rate is 0.85 percent of taxable sales (1.0 percent less 0.15 percent distributed to King County).

Figure 2. General Revenues by Major Source, City of Lake Forest Park, FY2003 Budget



Source: City of Lake Forest Park, Finance Department

Utility taxes, aggregated for all utilities (electrical, gas, telephone), represent the next largest tax source at $1.14 million in 2002, increased from $879,800 in 2000, for an annual average rate of growth of 9.9 percent. Tax collections from this source represented 16 percent of total operating revenues by source.

Total available revenue (general fund) to the City of Lake Forest Park, including funds from beginning fund balance, interest and interfund transactions, are budgeted at $6.5 million in 2002. This amount represents a decline of only 2.34 percent below the City's 2000 level of $6.65 million; but 15.2 percent reduction from 2002 revised total available revenues of $7.67 million.

Proposed Brightwater Wastewater Treatment Conveyance System—Project Description

The discussion presented in this section is intended to indicate only those key elements of the Brightwater wastewater treatment conveyance system that relate to the economic and fiscal issues dealt with in this study (a full description of the proposed project is available in the *Brightwater Draft EIS*).

Construction Phase of Brightwater Wastewater Conveyance System

The proposed Brightwater Wastewater conveyance system is part of a wastewater treatment system that comprises a number of components:

- An influent pipeline for carrying untreated wastewater to the plant;
- An effluent pipeline for carrying treated wastewater from the plant;
- A pump station to lift the wastewater to higher elevations so that it can continue to flow by gravity (depending on the alternative selected);
- Portals to provide access for tunneling equipment during pipeline construction and for pipeline maintenance after construction; and
- An outfall pipeline in Puget Sound with a diffuser at the end to mix the treated wastewater with water currents in the Sound.

The influent pipeline would follow a corridor of 7.8 miles from the intersection of Ballinger Way NE and NE 178th Street in Lake Forest Park, along Bothell Way NE near the northern end of Lake Washington to the intersection with NE 83rd Street before heading northeast through Bothell into Snohomish County to the treatment plant. The proposed influent pipeline traverses the Cities of Lake Forest Park and Kenmore for a distance of 0.75 miles and 2.88 miles respectively.

The effluent pipeline would follow a corridor of 12.5 miles that extends from the treatment plant to NE 195th Street, traversing the Cities of Kenmore and Lake Forest Park to Ballinger Way NE (State Route 104). At this intersection, the corridor turns northwest along Ballinger Way NE to NE 205th Street in Shoreline before heading into the Puget Sound. The effluent pipeline traverses the Cities of Kenmore and Lake Forest Park for a distance of 2.88 miles and 1.5 miles respectively.

These conveyance tunnels will be placed within a 1,000-foot-wide corridor of land while the portal siting areas are 72-acre (2,000-foot-diameter) areas within which only 1-2 acres would be used for construction of the portals. Portals will serve as staging areas and access points for tunnel construction. Six of the total ten portals (see Table 3) on the preferred influent and effluent pipeline corridors are located within the City limits of Lake Forest Park (2 portals) and Kenmore (4 portals).

Table 3. Location of Portals for Route 9- 195th Street System Preferred Alternative

Portal	*Location*	*Jurisdiction*
Route 9 Effluent		
7	**Ballinger Way NE & NE 195th Street**	**Lake Forest Park/Shoreline**
19	NW 205th Street & Richmond Beach Dr.	Shoreline/Woodway
23	NW 205th Street & NW 3rd Avenue	Shoreline/Edmonds
27	Lake Ballinger Way & NE 1st Avenue	Shoreline/Edmonds
45	**NE 195th Street & NE 57th Avenue**	**Kenmore/Lake Forest Park**
44	**NE 195th Street & NE 80th Avenue**	**Kenmore**
Route 9 Effluent/Influent		
41	NE 195th Street & NE 120 Avenue	Bothell
Route 9 Influent		
10	**Ballinger Way NE & NE 178th Street**	**Lake Forest Park**
11	**Bothell Way NE & NE 66th Avenue**	**Kenmore**
34	**Bothell Way NE & NE 80th Avenue**	**Kenmore**

Source: *Brightwater Draft EIS*

The total construction cost for the conveyance system alone (assuming the Force Main/Gravity Tunnel, the preferred system) is estimated at $728 million in 2002 dollars, (*Brightwater Treatment System, Cost Estimates for the Brightwater Systems, Information Handout, November 16, 2002*). These cost outlays have in turn been distributed over an estimated 2005-2008 timeframe of construction for the entire conveyance system as well as the Kenmore-Lake Forest Park segments (Table 4).

Table 4. Construction Cost Outlays for the Brightwater Conveyance System, 2005-2008 (in millions $)

Year	*Total System Cost*	*Estimated Cost*		
		Lake Forest Park	*Kenmore*	*City Total*
2005	$192.20	$23.6	$60.3	$83.9
2006	$227.50	$27.9	$71.4	$99.3
2007	$173.50	$21.3	$54.4	$75.7
2008	$134.80	$16.6	$42.3	$58.9
Cumulative total	**$728.00**	**$89.4**	**$228.4**	**$317.8**

The conveyance system is to be built over a four-year period, with the system expected to be fully-operational by 2010. The schedule for construction of the conveyance system calls for site preparation and portal construction– 1 to 2 years; tunneling of influent and effluent pipeline– 2 to 4 years and testing/startup – 1 year. Some of these activities will be carried out concurrently. For

purposes of this analysis, it is assumed that construction of the conveyance system will commence in 2005 and be completed at the end of 2008, with operations to begin in year 2010.

The total construction cost for the conveyance system within the jurisdictions of Kenmore and Lake Forest Park (assuming the Force Main/Gravity Tunnel, the preferred system) is estimated at $317.8 million in 2002 dollars. These cost outlays for building the Kenmore-Lake Forest Park conveyance segments have in turn been distributed over the 2005-2008 timeframe of construction (see Table 4).

Construction labor at the Brightwater conveyance system is estimated at a level of 250 workers during the peak construction period. Truck drivers would add an additional 60 – 70 workers. Combined, the total peak construction workforce is estimated at 310 – 320 workers (*Brightwater Draft EIS*, p. 16-37). These workers will be engaged along the entire conveyance system; 40 percent of which lies within the Cities of Lake Forest Park and Kenmore. (For purposes of this study, the construction workforce is estimated for several worker categories, namely, construction, architecture/engineering and administration, and machinery and equipment operation. Adding these other worker categories increases the peak construction workforce to 360 workers, as shown in Table 5 below.)

Economic and Fiscal (Revenue) Impacts Associated with the Brightwater Conveyance System

The primary focus of the analysis of economic impacts related to the Brightwater conveyance system is on the employment and earnings[2] generated during construction of the Kenmore and Lake Forest Park segments of the system. Employment measured in terms of full-time-equivalents is given for only construction, as shown in Table 5. Operation of the conveyance system is expected to yield no direct workers; maintenance of the system will be "housed" at the wastewater treatment facility. Several worker categories including construction workers, machinery and equipment operation workers, and architectural, engineering, and administrative (A/E&A) workers are included in the direct worker totals. Peak year employment for the Kenmore-Lake Forest Park segments was estimated at 214 workers of whom about 70 percent are in construction occupations. Both construction and A/E&A workers were estimated based on their respective cost shares of total construction program outlays. For construction workers the labor share represented 26.1 percent of total contract construction outlays based on the *1997 Census of Heavy Construction Contractors*. The labor share represented by machine and equipment installers was estimated at 33.3 percent of expenditures for these materials. The labor share represented by A/E&A workers was estimated at 38.8 percent of expenditures represented by these activities. The labor share for this worker group was based on the earnings to output ratio for the engineering and architectural services sector in Washington State in 2000 (as reported in tabulations generated by the IMPLAN, 2000 Version economic impact model used in this study).

The average annual wage applied for construction workers (water, sewer, and utility lines workers) is $49,500 unadjusted and $55,100 adjusted (i.e., with benefits). Similarly, architecture, engineering and administration (A&E/A) worker annual earnings were based on average earnings for architecture, engineering and management, at $56,250 unadjusted ($62,500 adjusted); again based on information from the U.S. Bureau of Labor Statistics.

Indirect earnings were estimated at $42,400 unadjusted ($47,900 adjusted), based on the state average for all workers in the local government, state government, finance, insurance, and real estate (FIRE), retail trade, and services sectors, exclusive of prepackage software and computer programming, and a portion of the construction, wholesale trade, and transportation and public utilities sectors. U.S. Bureau of Labor Statistics data for 2001 was used to estimate the indirect earnings average, which was then inflated to 2002 dollars.

[2] Earnings refer to wages and salaries of workers and proprietors' income.

Table 5. Brightwater Conveyance System Employment and Earnings for Kenmore and Lake Forest Park Segments (2002 Millions $)

Category	*2005*	*2006*	*2007*	*2008*
Direct workforce	**181**	**214**	**163**	**127**
Construction	135	150	120	96
Machinery& equipment operators	33	48	30	21
Architecture, engineering & administration	13	16	13	10
Indirect workforce	167	198	150	117
Total employment	**348**	**412**	**313**	**244**
Direct earnings (millions $)	**$10.25**	**$12.27**	**$9.30**	**$7.22**
Indirect earnings (millions $)	$6.16	$7.36	$5.58	$4.29
Total earnings (millions $)	**$16.41**	**$19.63**	**$14.88**	**$11.51**

Indirect employment and earnings were estimated based on multipliers obtained from the Washington State input-output model (IMPLAN, 2000 and Chase, 1996). The estimated employment multiplier for the Brightwater conveyance system is 1.92; in other words, for every construction-related worker along the Kenmore-Lake Forest Park segment, there is another 0.92 worker hired in other businesses within the region. In similar fashion, the earnings multiplier for the Brightwater conveyance system is 1.60; meaning that every construction-related dollar results in another 0.6 dollars generated within the regional economy.

Although the employment and earnings impacts are expected to be significant during construction of the Kenmore-Lake Forest Park segments, it does not necessarily follow that all of these direct workers (or even a modest share) will reside within these two Cities. In fact, based on previous studies, available labor for heavy construction trades is expected to be drawn from a multi-county region (for example, King, Snohomish, and Pierce Counties). For the indirect workers, shares attributable to these two Cities is expected to be somewhat higher based on a multitude of factors including increased expenditures by on-site workers, and local trade and service businesses hiring higher share of local workers. Table 6 provides shares that are order-of-magnitude estimates of workers by place of residence, including the Cities of Kenmore and Lake Forest Park. It is difficult to predict with any precision where workers reside; however, based on previous experience with construction workforce commutation and relocation behavior, these are reasonable estimates.

Table 6. Labor Supply of Kenmore-Lake Forest Park Segments of the Brightwater Conveyance System, 2005-2008

Distribution by Residence	*Worker Supply*	*Worker Demand*			
		2005	*2006*	*2007*	*2008*
Direct workforce					
Kenmore & Lake Forest Park	**5%**	**9**	**11**	**8**	**6**
Rest of King County	50%	91	107	82	64
Snohomish County	30%	54	64	49	38
Pierce County	10%	18	21	16	13
Rest of Washington	5%	9	11	8	6
Total direct workforce	100%	181	214	163	127
Indirect workforce					
Kenmore & Lake Forest Park	**10%**	**17**	**20**	**15**	**12**
Rest of King County	60%	100	119	90	70
Snohomish County	25%	42	49	38	29
Pierce County	3%	5	6	5	4
Rest of Washington	2%	3	4	3	2
Total indirect workforce	100%	167	198	150	117

Construction of the Brightwater conveyance system will require millions of dollars worth of materials and supplies. A significant portion of these materials and supplies will be purchased from local vendors within the region, some of which are located within the Cities of Kenmore and Lake Forest Park. Sales and use tax collections represent the major component of direct revenue contributions to the Cities. The property tax is not applicable, as the project would be publicly-owned; along with the real estate excise tax. Finally, the utility tax on electricity is estimated to generate negligible revenues during construction.

Similar to the required workforce being drawn from a wide area, required materials and supplies for construction of the conveyance system will likewise be obtained from the greater Puget Sound region. Given the present mix of businesses within the Cities of Kenmore and Lake Forest Park, few construction-related purchases for needed materials and supplies will be directly purchased within these two Cities. Consequently, the expected increase in sales tax collections due to construction of conveyance system is modest at best; less than $50,000 in sales tax will be collected over the four-year construction period (Table 7).

Table 7. Construction of Brightwater Conveyance System: Sales & Use Tax Collections (2002 dollars)

City	*2005*	*2006*	*2007*	*2008*	*Cumulative Total*
Lake Forest Park	$1,800	$2,100	$1,600	$1,200	$6,700
Kenmore	$11,300	$13,300	$10,100	$7,900	$42,600
Total, combined Cities	$13,100	$15,400	$11,700	$9,100	$49,300

Potential Adverse Economic Impacts

Will the construction-related activity hamper or adversely affect nearby existing businesses within the Cities of Kenmore and Lake Forest Park? Two of the designated portals (namely, portal #10 at the intersection of Ballinger Way NE and NE 178th Street; and portal #11 at the intersection of NE Bothell Way and 66th Avenue NE) include major shopping districts within the Cities of Kenmore and Lake Forest Park. Obviously, the specific final location for these portals could adversely affect existing retail trade and service establishments within Kenmore and Lake Forest Park. In order to minimize adverse economic impacts, planners will need to locate the staging areas for these two portals away from these major shopping districts. Increased truck traffic associated with these two portals may be associated with a decline in shopping trips to these retail districts. However, given the imprecise location of these staging areas, potential economic impacts can not be quantified.

Summary and Conclusions

This study provides an assessment of the economic and fiscal impacts for the proposed conveyance system traversing the Cities of Kenmore and Lake Forest Park. Placement of the conveyance system—influent and effluent pipelines will affect a stream of revenues and create jobs within these Cities.

Results indicate that construction of the Brightwater conveyance system will generate only modest gains in employment, directly related to the project as well as spin-off employment within the Cities. Peak construction employment for the Kenmore-Lake Forest Park segments of the Brightwater conveyance system is estimated at 412 workers, with total earnings of $19.6 million in year 2006. However, only a small share (5 percent) of these workers is expected to reside locally within the Cities of Kenmore and Lake Forest Park.

Revenue impacts on the Cities of Kenmore and Lake Forest Park are also projected to be quite modest; these two Cities are projected to collect less than $50,000 in sales tax over the construction period. Given the imprecise location of the construction staging areas (i.e., portals), it can not be determined the potential adverse effects to existing businesses of nearby shopping districts in the two Cities.

FINAL
ENVIRONMENTAL
IMPACT STATEMENT

Brightwater
Regional Wastewater
Treatment System

COMMENTS AND RESPONSES

G1
CITY OF LAKE FOREST PARK—ECONOMIC DEVELOPMENT COMMISSION

Mayor
David R. Hutchinson

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Lake Forest Park, WA 98155-5556
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FAX 206-364-6521
E-mail: cityhall@ci.lake-forest-park.wa.us
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CITY OF LAKE FOREST PARK
INCORPORATED 1961

Councilmembers
Carolyn Armanini
Mary Jane Goss
Nathan Herzog
Alan S. Kiest
Roger Olstad
Ed Sterner
Dwight A. Thompson

RECEIVED
DEC 18 2002
ENVIRONMENTAL PLANNING DIVISION

December 3, 2002

Don Theiler, Manager
King County Wastewater Treatment Division
King Street Center: KSC-NR-0505
201 Jackson Street
Seattle, WA 98104-9972

Dear Don:

G1-1 The following is an expression of our concern over Brightwater impacts on our city and the potential economic impacts. The proposed routes of the pipeline/tunnels cross our City and the location of portals and pump stations will significantly impact our town center and quality of life.

G1-2 Lake Forest Park's Town Centre shopping mall is the economic and retail heart of our community. Bordered by Ballinger and Bothell Ways, it is a hub for local commerce and access to the center is critical for its success. Many businesses are already marginally profitable, and, were your portals and traffic generated by construction to impede access, these merchants may not survive. Furthermore, the traffic issues around the center are difficult now; a portal at 178th and 44th NE will generate endless gridlock in the neighborhood and on these arterials.

G1-3 We also want to support the Water District of Lake Forest Park in their cautions to protect the local watershed at all cost. The artesian wells have been a source of quality water at a competitive price in the community for generations and we cannot have this resource compromised. Furthermore, the clear emergent waters that surface from the wells feed Lyon Creek, an important salmonoid stream that, as a community, we are committed to protect.

These positions are unanimously supported by the Economic Development Commission and as chair of the Commission, I have been directed to advise of our position.

Response to Comment G1-1

Thank you for your comment.

Response to Comment G1-2

Please refer to the responses to the City of Lake Forest Park, Comment C4-7, and to Ceis, Comment I301-1.

Response to Comment G1-3

Please refer to the response to the City of Lake Forest Park, Comment C4-8.

Don Theiler
December 3, 2002
Page Two

Sincerely,

Jeff Weissman

Jeff Weissman
Chair, Economic Development Commission
City of Lake Forest Park

Cc: Mayor Dave Hutchinson
Karen Haines, City Administrator
Michael Popiwny, Mgr. KC WW Treatment Division
Christine True, Mgr. KC WW Treatment Division
Gordon Hungar, LFP Water District

C1
CITY OF MEDINA

FINAL
ENVIRONMENTAL
IMPACT STATEMENT

Brightwater
Regional Wastewater
Treatment System

COMMENTS AND RESPONSES

11-08-02

To. KC Dept of Natl Resources & Parks
Wastewater Treatment Division

Re: Brightwater Treatment Sysh
Draft EIS Public Notice

Fm: PBD / Mcl City Council (425) 453-8288
cc: Jane Lamensdorf-Bucher / WRIA (8)

Thanks for the opportunity to comment on the DEIS summary — a useful document.

C1-1 1. The brochure does not describe the No Action Alternative on page 5-System Summary. Your statements indicate current regional facilities will reach capacity by 2010. Although the DEIS probably discusses the No Action Alternative, the impacts of no Action should be discussed in this ≤ which is widely read. If growth/development is halted because of wastewater treatment shortfalls, e.g. you should so indicate.

C1-2 2. The system maps p 4 for the preferred & 2 other alternatives indicate that there will be at least 2 Portals/Pump Stations (#10 Lake Forrest Park & #11 Kenmore) adjacent to Lake WA. As a member of the WRIA 8 (Lake WA) Forum, I recommend the WRIA (8) Technical committee review the BTS Draft EIS for possible impacts on Lake WA., adjacent rivers/streams & wetlands salmon habitat.

Response to Comment C1-1

King County agrees that it is important for citizens to understand the ramifications of the No Action Alternative with regard to the Brightwater project. As you have pointed out, the Draft EIS summary focused primarily on the action alternatives, the Draft EIS itself did address the impacts of the No Action Alternative.

Response to Comment C1-2

A Draft EIS was sent to the following members of WRIA 8: Geoff Clayton and Dave Gosset (Snohomish County Council member). Please note that the influent conveyance route for the Route 9 System alternatives has been revised and no longer includes Portal Siting Area 10 in Lake Forest Park. Please refer to the revised project description in Chapter 3 of the Final EIS.

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C11
CITY OF MOUNTLAKE TERRACE

FINAL
ENVIRONMENTAL
IMPACT STATEMENT

Brightwater
Regional Wastewater
Treatment System

COMMENTS AND RESPONSES

MOUNTLAKE TERRACE

CERTIFIED MAIL

January 21, 2003

RECEIVED
JAN 24 2003
ENVIRONMENTAL PLANNING DIVISION

Don Theiler, Manager
Environmental Planning
King County Wastewater Treatment Division
201 South Jackson Street, KCS-NR-0505
Seattle, WA 98104

Subject: City of Mountlake Terrace Comments on the Brightwater Regional Treatment System Draft Environmental Impact Statement

Dear Mr. Theiler:

This letter contains comments from the City of Mountlake Terrace regarding Draft Environmental Impact Statement (DEIS) issued by King County for the Brightwater project.

C11-1 First, while the DEIS is comprised of approximately 900 pages, plus referenced documents, it does not adequately address impacts and mitigation for the 228th Street System and the Unocal System alternatives, especially as they relate to the natural and built environment of Mountlake Terrace. Under the State Environmental Policy Act, information must be adequate for decision-makers to understand the impacts of a project and to determine appropriate mitigation. The City has found the DEIS to be vague and inadequate in many regards, especially as described in other sections of this letter.

C11-2 Second, the environmental analysis should recognize that the Brightwater project is subject to the essential public facilities siting process, pursuant to the adopted Snohomish County county-wide planning policies.

C11-3 Third, the City recommends that if the Brightwater treatment facility is built at the Route 9 site, King County incorporate options for future use of reclaimed water into the system design. A system that uses reclaimed water is an important opportunity to mitigate water resource and fish habitat impacts, and, in general, to practice proactive environmental stewardship.

C11-4 Fourth, upon review of the three alternatives, the 195th Street System appears to have somewhat less adverse impacts, in total, than the other two. Therefore, the City supports King County in its choice of the 195th Street System as the preferred alternative.

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fax 425.776.5788

Fire Department
23204 58th Ave West
Mountlake Terrace WA 98043
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fax 425.778.6421

Recreation & Parks
5303 228th St SW
Mountlake Terrace WA 98043
425.776.9173
fax 425.775.2365

Response to Comment C11-1

Both the Draft EIS and the Final EIS include a discussion of the probable significant adverse environmental impacts and reasonable mitigation measures for those identified impacts for all of the alternatives beyond that referenced in this comment. The Brightwater proposal involves several facilities and significant complexity. The Draft EIS was issued at a point in time when a certain level of information was known relating to the probable significant adverse impacts of the proposal and possible ways to reasonably mitigate those impacts. In areas where there was uncertainty regarding the impacts, the Draft EIS presented, consistent with SEPA Guidelines, a worst-case analysis of impacts. In other areas the Draft EIS indicated that ongoing analysis was underway and that additional information would be forthcoming. Since issuance of the Draft EIS in late 2002, considerable additional analysis has been conducted, as is the case on any large project, to further define and develop the proposal and respond to Draft EIS comments. Additional analysis relating to probable significant adverse environmental impacts is included as part of the Final EIS analysis.

Response to Comment C11-2

Please refer to the response to the City of Edmonds, Comment C9-5.

Response to Comment C11-3

If the plant is built at either the Route 9 or Unocal site, provision will be made to allow the use of reclaimed water by potential users. Please refer to the discussion of potential reclaimed water projects presented in Appendix 3-D, Reclaimed Water Technology Review and Evaluation of Potential Water Reuse Opportunities, of the Final EIS. Please refer to the response to the Snohomish County Planning and Development Services, Comment S3-7.

Response to Comment C11-4

Thank you for stating your preference.

Brightwater Regional Treatment System
City of Mountlake Terrace's comments to
Draft Environmental Impact Statement

January 21, 2003
Page 2 of 9

General

More specific information about the Mountlake Terrace environment is needed in the Final Environmental Impact Statement (FEIS), for example:

- Roadways (e.g., which streets, for how long, what kind of damage, how much inconvenience, who is affected);
- Vegetation (e.g., what vegetation, where, actual effects on habitat, slope stability);
- Parks and any City-owned facilities (e.g., which parks, which facilities, what effects on customers);
- Private property (e.g., which sites, which buildings, what businesses, how many people);
- Air quality, especially as affected by construction activities (e.g., what potential health problems, to whom);
- City revenues (e.g., which, if any, property and sales tax revenues would be lost, how would that affect public services, including recreation programs); and
- Ground water (e.g., which aquifers, which stream flows, how much water).

C11-5

The DEIS is vague in identifying mitigation for Brightwater impacts affecting Mountlake Terrace. It frequently says that mitigation will be decided "later" in the process or that mitigation will happen through the local permit process. The flaw of the former approach is that the Environmental Impact Statement needs to provide the basis for understanding impacts and identifying the appropriate mitigation. This is not possible when the DEIS is vague. The flaw of the latter approach (i.e., relying on local permits) is that much of the necessary and appropriate mitigation will be well beyond the typical scope of permit conditions. The FEIS must be more specific and it must recognize that simply repairing something to minimum conditions is not adequate mitigation.

C11-6

It appears that much of the information contained in the DEIS was written prior to the scoping process and there was a lack of effort to fully respond to new issues raised through it. The result of providing insufficient response to Mountlake Terrace's scoping questions, and relying on the permit process for mitigation, is that King County appears to be providing itself with broad latitude to sidestep its responsibility to appropriately mitigate the impacts of Brightwater. Vague descriptions of mitigation measures seem intended to provide King County the opportunity to interpret the means and extent of impact mitigation.

C11-7

SEPA Procedures / Issues Associated with Adequacy of Worst Case Scenario

The DEIS (Foreword, p. ii) states this is a "project" EIS. Further, *"this preferred alternative is for public discussion only, and is not intended in any way to prejudge the County's final decision, which will be made after additional analysis and public comments on the Draft EIS are collected"*). In that same section, the statement is made

Response to Comment C11-5

The Draft EIS does identify, for each element of the environment evaluated in the Draft EIS, probable significant adverse environmental impacts and reasonable mitigation measures. In response to comments calling for additional specificity, the Final EIS provides substantially more detail in the discussion of a wide range of reasonable mitigation measures.

WAC 197-11-448(1) notes that:

... the environmental impact statement is not required to evaluate and document all of the possible effects and considerations of a decision or to contain the balancing judgments that must ultimately be made by the decision makers. Rather, the environmental impact statement analyzes environmental impacts…

City revenues were not an element discussed in the Draft EIS and will not be addressed as part of the Final EIS as it is not an environmental impact. Nonetheless, King County will work with local jurisdiction, as applicable, during the permitting process.

Response to Comment C11-6

Due to the extensive scope and scale of the Brightwater alternatives analyzed in the Draft EIS, the process of collecting and analyzing information about potential environmental impacts and proposed measures designed to mitigate significant adverse environmental impacts did begin prior to the formal scoping process. This is the usual practice for such large projects where many of the potential environmental impacts are known prior to soliciting scoping comments from agencies and the public and the additional time for study is beneficial to the SEPA process. All scoping comments were reviewed and considered in preparation of the Draft EIS, including those that raised new issues.

The level of detailed information about significant adverse environmental impacts that may occur as a result of implementing the Brightwater proposal and the mitigation that is proposed is appropriate for a SEPA analysis. After an alternative is selected following issuance of the Final EIS, more detailed information will be developed in conjunction with host jurisdictions about the specific proposal, its impacts, and mitigation; and this will be the subject of multiple permitting processes. Please also refer to the responses to the Upper Bear Creek Unincorporated Area Council, Comment O11-17.

Response to Comment C11-7

As required under SEPA, a decision on a Brightwater System can only be made after the issuance of the Final EIS. For areas where information is incomplete or unavailable, SEPA encourages a worst-case scenario discussion in an EIS. There were several examples of this type of discussion in the Draft EIS in accordance with WAC 197-11-080.

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C11-7 that *"where information is limited, the impacts presented are a worst case analysis"* (emphasis added).

C11-8 WAC 197–11–080 indicates that "agencies may proceed in the absence of vital information …" and "… shall generally indicate in the appropriate environmental documents its worst case analysis and the likelihood of occurrence, to the extent this information can reasonably be developed."

Under "Subsequent Environmental Analysis" (Fact Sheet, p. viii), the statement is made that *"this EIS is intended to serve as the basis for all local and state permits and approvals required to construct Brightwater facilities."* Yet the afore-mentioned "additional analysis" and resulting decision may affect local (City) permit review processes.

The City is concerned about how the "additional analysis" will be integrated into the SEPA record and provided to the public, particularly for construction activities likely to occur within its boundaries. Further, the City is concerned that the general nature of the conveyance "corridor" analysis may not adequately address "worst case" conditions resulting from conveyance and portal construction at specific sites within its boundaries and that the subsequent "additional analysis" may reveal significant impacts on adjacent properties and activities for which suitable mitigation measures have not been identified within the "project" EIS.

C11-9 Given that the specific location of proposed portals are not determined, it is impossible to evaluate the probable construction and operational impacts associated with those sites, and to evaluate the adequacy of the mitigation proposed. Once the specific portal locations are proposed, the City of Mountlake Terrace needs an opportunity to comment on the specific mitigation proposed by the county to address those impacts.

C11-10 **Earth and Groundwater**
As noted in the Land and Shoreline Use chapter of the DEIS, the evaluation of impacts to conveyance corridor portals is provided at a programmatic, rather than site specific level:

> The identified portal siting areas reviewed in this EIS are 72 acres in size; however, only 1 to 2 acres of the 72-acre siting area would actually be required for construction. **Because the specific portal locations within the siting areas have not been identified, the characterization of the land use and project impacts within the 72-acre portal siting areas represents the potential and not actual impacts. Following additional analysis, a precise location will be selected within each portal siting area** (emphasis added). This EIS is intended to disclose the range of significant adverse environmental impacts for whichever specific locations are selected as well as to identify related mitigation measures.[1]

[1] Page 11-16.

Response to Comment C11-8

This EIS is, in fact, intended to serve as the SEPA basis for all local and state permits and approvals. It is anticipated that in most instances, local or state agencies will simply adopt the EIS. In some circumstances, it may be that additional SEPA review is conducted, such as issuance of an addendum. This additional SEPA review will become part of the SEPA record. With respect to conveyance corridors, the Final EIS contains substantially more information and identifies specific candidate portal sites within each portal siting area. Impacts are disclosed for each of these, along with suitable mitigation. Finally, King County will work collaboratively with each jurisdiction to provide needed information and analysis to support the permit review process.

Response to Comment C11-9

The Final EIS provides additional specificity regarding the location and impacts of portals. Mountlake Terrace, if it is a host jurisdiction for construction of any portals, will have additional opportunity to comment on and discuss mitigation measures with King County prior to its issuance of any permits or approvals.

Response to Comment C11-10

The Final EIS provides additional specificity with respect to both conveyance and portal location, analysis, and mitigation measures. Following issuance of the Final EIS and the King County Executive's decision on a Brightwater System, jurisdictions with regulatory authority over Brightwater facilities will be able to conduct additional detailed discussion with King County concerning the construction and operation of any facilities proposed in their jurisdiction, as part of their respective permit and approval processes.

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C11-10 Without the specific portal locations being identified for review in the DEIS, it is impossible for the City to be informed about the nature and extent of impacts associated with portal construction and operation. Mountlake Terrace believes that the analysis inadequately addresses the specific impacts associated with the excavation of Portals 5, 26, 30, and 27 (e.g., the size and number of truckloads required for excavation, period of time required for excavation) on adjacent property, infrastructure, and the environment, to the degree identified in the City's scoping letter.

C11-11 **Vibration**
While vibration is acknowledged as a construction impact common to all corridors (with impacts being greatest for structures with shallow foundations located near portals[2]), no quantifiable impacts are identified. The DEIS indicates that specific construction techniques and the resulting vibration levels will depend on the actual designs developed; however the techniques to be used and their potential impacts and mitigation are not described.[3] The City believes that the analysis does not adequately address the specific impacts and mitigations associated with the portal locations proposed at Portal Siting Areas (PSAs) 5, 26, 30, and 27. The City contends that King County should provide the opportunity to comment on the adequacy of specific mitigations prior to selection of the final portal site/s.

C11-12 **Portal Design**
The City considers the DEIS analysis pertaining to the specifics of the final portal and conveyance corridor design (portal diameter, structures to be located at the portal, conveyance corridor sizes, etc.) to be inadequate to evaluate the possible impacts and mitigations proposed and believes it necessary to have this information presented prior to final selection of an alternative.

C11-13 **Soils – Potential For Portal Wall Collapse**
An evaluation should be made of the adequacy and impacts of the specific portal wall construction techniques to provide soil stability of the areas surrounding the portal sites. The evaluation should also identify mitigation for the impacts. This should be included in the FEIS and provided to local jurisdictions for comment. The DEIS does not address this level of detail since the specific portal locations have not been identified.

C11-14 **Erosion**
The DEIS does not fully describe soil erosion impacts since specific portal sites have not been identified. While the DEIS provides mitigation for a range of such possible impacts, the appropriateness of the possible mitigations to the actual impacts cannot be determined without knowing the probable site-specific impacts.

[2] Page 4-37.
[3] Page 4-37.

Response to Comment C11-11

The Final EIS provides additional specificity with respect to the vibration impacts of portal construction. For example, vibration impacts could potentially occur at the portals that would be constructed using sheet piles and sheet-pile construction is currently proposed at Portals 11 and 14 for the Unocal Conveyance Alternative. There are no mitigation techniques that fully reduce vibration from pile driving operations. In areas where geological conditions permit their use, vibratory or sonic pile drivers could be used to reduce the vibrations associated with this activity. In addition, earthmoving and pile driving operations could be scheduled to avoid occurrence at the same time. The total vibration level produced can be significantly reduced when each vibration source operates separately. In addition, at locations near fragile historic resources, additional measures could be followed to ensure that no damage occurs. If Mountlake Terrace is the host community for any portals, it will have the opportunity to comment on and discuss mitigation measures during permitting.

Response to Comment C11-12

The Final EIS provides substantial additional specificity with respect to the impacts of portals discussed in the document. Based on the Final EIS, the King County Executive will select a final Brightwater System.

Response to Comment C11-13

A more detailed evaluation of portal construction techniques was conducted subsequent to the publication of the Draft EIS. This new information has been incorporated into Chapter 3 of the Final EIS.

The specific portal locations within each portal siting area will not be determined until after the publication of the Final EIS and the King County Executive has selected an alternative for construction.

Response to Comment C11-14

Since the Draft EIS, erosion hazards for the portal areas have been evaluated through field reconnaissance at each portal site. Chapter 4 of the Final EIS describes the results of this evaluation. Chapter 6 describes erosion control measures that will be implemented to mitigate erosion both during construction and operations. The range of potential erosion impacts has been described and standard construction practices are successfully routinely used in this region to control these typical types of erosion possibilities. As sites are selected, more complete information will be obtained, allowing the appropriate design to be applied to site specific conditions. During the permitting process, this greater level of detail will be available for review by the appropriate jurisdictions.

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C11-15 **Air quality**
The adequacy of the proposed air impact mitigations cannot be evaluated by the City since the amount of earth to be removed, and number of trucks daily is not identified in the DEIS. This information should be provided in greater detail and should recognize the special impacts to people with respiratory problems in the FEIS. In addition, mitigation to address air quality impacts created by pollution from additional vehicles and equipment should include the planting of trees and other vegetation in the public right-of-way or in public parks, in a manner approved by the City.

C11-16 **Transportation**
The heavy vehicle traffic associated with construction of the portals or operation of equipment and pass-through vehicle traffic associated with the other aspects of Brightwater project in Mountlake Terrace will damage City streets beyond the level of wear and tear that the City could anticipate under normal traffic conditions. In addition, King County should be aware that truck traffic is not allowed on many residential access streets and that Lakeview Drive is closed to traffic over five tons in weight.

C11-17 The City's scoping letter requested information about transportation impacts occurring during construction along 228th – specifically, impacts to the Ballinger Recreation facility, and access impacts along 228th for traffic headed toward the downtown Mountlake Terrace area. The DEIS does not adequately address these impacts. The mitigation provided ensures that a comprehensive traffic plan will be developed, however the specifics of that plan are unavailable for the City's comment at this time. The City finds the DEIS is inadequate in mitigating: access impacts to businesses along 228th Street, as well as the potential loss of revenue to both the affected businesses and to the City; the impacts of rerouting traffic through the highly-residential neighborhoods that flank 228th Street; and the noise and air impacts resulting from traffic congestion.

C11-18 The DEIS indicates that streets will be restored to "pre-existing or better conditions". However, the FEIS should recognize the broad nature of construction impacts, especially: (a) delays or inconveniences to motorists, pedestrians, bicyclists, and emergency response teams; and (b) pollution caused by additional vehicles and equipment. Mitigation for these impacts should include reconstruction of affected roadways to fully meet all city roadway standards, as well as improvements to trails and sidewalks.

C11-19 **Parking**
The DEIS inadequately addresses impacts to the park-and-ride lot located off the 236th Street exit from I-5, and potential mitigations for any impacts. The DEIS also does not adequately address the number of construction workers anticipated at the Unocal treatment plant site, or define the potential impacts associated with transporting such personnel to the construction site. The Final EIS should more clearly identify the parking issues for the 228th Street System and the Unocal System, as they relate to parking supply in Mountlake Terrace.

Response to Comment C11-15

Additional information on truck trips is provided in Chapter 16 of the Final EIS. Impacts to air quality are discussed in Chapter 5 of the Final EIS and in Appendix 5-B, Odor Analysis: Conveyance. King County will coordinate with affected jurisdictions throughout the design process to reduce impacts to the greatest extent possible.

Response to Comment C11-16

Additional detailed analyses of construction traffic related to specific portal locations have been included in Chapter 16 of the Final EIS and construction traffic routes and traffic impacts were identified. No truck traffic would access Portal 26 from Lakeview Drive. Please refer to Appendix 16-B, Transportation Impact: Plant Sites and Conveyance, for greater detail.

A traffic management plan (TMP) addressing the proposed mitigation measures for the portal construction traffic impacts would be developed and is described further in the Final EIS. The TMP includes specific mitigation measures that would reduce traffic impacts along construction access routes and on residential access streets. This plan would include construction scheduling, hours of work, necessary improvements to the roadway network to maintain adequate traffic operating conditions, traffic control, and circulation plans to ensure safety to all travel modes along the affected roadways. King County would finalize these measures in conjunction with the affected jurisdictions during the construction permitting process. The TMP would also include a plan for monitoring and restoration of streets to pre-existing conditions, access for emergency services, and safe access for pedestrians and bicyclists, and would control the movement of workers, equipment, and delivery materials to minimize the traffic impacts along project access corridors.

Construction-related activities, such as loading and unloading, would occur onsite and not on the transportation system.

Response to Comment C11-17

The conveyance system would be constructed by tunneling underground, limiting surface impacts to portal sites only. During portal and site construction, roads adjacent to construction and portal sites would not be closed and through access would be maintained at all times. Vehicle access to homes and businesses along 228th Street would be maintained at all times during all construction phases of the Brightwater project. A traffic management plan (TMP) would be prepared with the permitting agency that would include measures for maintaining and coordinating vehicle access.

Please refer to the response to Comment C11-16 in this letter. The surrounding roadway network affected by the proposed Brightwater project development would be mitigated to acceptable operating conditions.

Response to Comment C11-18

Please refer to the response to Comment C11-16 in this letter and to Chapter 5 for air quality impacts caused by additional vehicles and equipment.

Response to Comment C11-19

A detailed analysis of three possible remote offsite parking locations with shuttle bus services for Unocal site construction workers and the resulting impacts has been included in Chapter 16 of the Final EIS. The locations of the sites and access routes between the Unocal site and these lots were identified. No existing park-and-ride locations were considered for construction worker parking. Please refer to Appendix 16-B, Transportation Impact: Plant Sites and Conveyance, for greater detail.

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C11-20

Ground Water

Ground water, which is part of the hydrology of the watershed, can be severely affected by excavation. The DEIS is inadequate in answering the following questions: What would be the impact of deep tunneling on underground water flows? What affect would the construction of portals and tunnels have on aquifer(s), wells, and stream flows? How would the aquifer(s) be protected from contamination or draining into the portals and tunnels that could result from construction? How will ground water that is intercepted by portals, tunnels or trenches be restored? What mitigation methods would be used to avoid disrupting the flow of ground water? The FEIS should more specifically answer these questions.

C11-21

Plants

Trees and other plants are important environmental and visual features in Mountlake Terrace. The City's scoping comments noted the potential impacts to mature trees and other vegetation, and the habitats associated with these areas. The DEIS provides the following two mitigations to address these impacts:

> Vegetation removal, particularly trees, will be minimized.
>
> Portal siting will attempt to minimize impacts to sensitive resources. Most construction will occur in areas that are already developed. Undeveloped portions of portal sites will be revegetated as soon as construction is complete.

The City does not consider these mitigations to be sufficient in addressing the potential loss, including habitat loss, associated with these environmental and visual resources within Mountlake Terrace. Mitigation should include the enhancement (e.g., planting of mature trees) of sites, especially those in the public domain.

C11-22

Noise

The City is concerned about noise impacts from construction. Portals 26 and 30 (Route 9 - 228th Alternative) have the highest proportion of surrounding residential land uses, and Portal 27 (Route 9 – 195th Street Alternative) has the next highest proportion, with a larger percentage of open space (gold course). Portal 5 (Unocal Alternative) is largely surrounded by commercial uses. The impact assessment indicates that portal siting areas located within the most densely developed residential areas would have a greater impact than those in relatively undeveloped areas. This would suggest that noise impacts would likely affect both Route 9 alternatives, with the 228th Alternative experiencing higher impacts due to the higher residential densities. The DEIS suggests that most construction would occur during daytime hours, also indicating that business and commercial uses at Portal 7 will be affected.

The DEIS does not provide the information necessary to evaluate the adequacy of noise impact mitigations proposed since final portal locations have not been determined and the specific impacts of portal construction in those locations are not known.

Response to Comment C11-20

The issues raised in this comment are specifically addressed in more detail in Chapter 6 and Appendix 6-B, Geology and Groundwater, of the Final EIS.

Response to Comment C11-21

Please refer to the response to the City of Shoreline, Comment C6-5, for information regarding mitigation plans and policies.

Response to Comment C11-22

Conveyance portal construction noise impacts and mitigation are discussed in greater detail in the Final EIS. Each of the potential portal locations is discussed with respect to existing conditions and potential noise and vibration impacts and proposed noise and vibration mitigation is specified for each.

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C11-23 **Compensation for Impacts**
The DEIS indicates that state and federal laws will provide guidance for compensating property owners whose property is purchased for this project, however, the DEIS does not adequately address the criteria that will be used to provide compensation for property damage. Mitigation should take into account all impacts, including temporary relocation of occupants.

C11-24 **Land and Shoreline Use**
The City of Mountlake Terrace feels that the DEIS inadequately addresses the City's jurisdiction in addressing City land use regulations. The representation of the location of PSA 30 appears different on different maps used in the DEIS and it is unclear if any portion of Portal Site Area (PSA) 30 is located within the City of Mountlake Terrace, or if it is merely immediately adjacent to this portal siting area. If the accurate depiction of this PSA is intended to include Mountlake Terrace, consideration of the City's jurisdiction has been omitted from Table 11-6 and the related discussion of the portal (page 11-25). A portion of Portal 27 is clearly located within the City, but the City's jurisdiction is similarly not addressed in either Table 11-7 or the discussion of land uses within that portal siting area (page 11-26). The absence of this information results in an inaccurate summary of exactly what land uses are impacted, the possible extent of those land uses, what uses are allowed under existing zoning and what permits are necessary for construction of conveyance facilities along either the 195th Street or 228th Street alignment of the Route 9 corridor.

C11-25 **Displacement of Existing Uses – Commercial and Residential**
Since the specific locations of proposed portal within the 72-acre siting area have not been defined, the DEIS does not identify the specific impacts to existing land uses, and therefore the City is unable to evaluate the adequacy of the mitigations proposed. The City is not convinced that, without site-specific analysis, the anticipated worse case analysis fully considers impacts and provides appropriate mitigations to address those impacts.

Concerns about Impacts to Specific Portal Siting Areas:

C11-26 • **Portal Siting Area 5 – Unocal Alternative**
The City does not feel that the DEIS has adequately address impacts of siting a portal at PSA 5. This area contains a mix of business and commercial uses, as well as residential uses, all of which could be impacted by both portal construction and operation, and which would require displacing a significant number of uses.

C11-27 ***Parking Impacts:*** Businesses in the Gateway Place commercial area currently use Lot 2 for parking, until such time as a new building is located there to include structured parking, in accordance with the Gateway Place Binding Site Plan. That Plan provides for the reciprocal use of parking facilities among the lots to meet commercial needs and City standards. At this time, parking utilization often exceeds the existing capacity.

Response to Comment C11-23

The Draft EIS does identify, for each element of the environment evaluated in the Draft EIS, reasonable mitigation measures. In response to comments such as this calling for additional specificity, the Final EIS provides additional detail in the discussion of a wide range of reasonable mitigation measures. King County will follow applicable federal and state laws and King County policies and procedures in acquiring property for the project. This includes offering fair market value as determined by an independent third-party certified appraiser for all property acquired for the Brightwater project. Please refer to the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 and the King County Property Acquisition and Relocation Web site at http://dnr.metrokc.gov/wtd/row/acquisition.htm for more information.

Some aspects of the mitigation suggested by this comment may constitute an unlawful gift of public funds depending upon the particular circumstances.

Response to Comment C11-24

The referenced tables have been corrected in Chapter 11 of the Final EIS. Additional text on the City of Mountlake Terrace's comprehensive plan policies and zoning regulations related to the siting of Brightwater has also been included in and Appendix 11-A, Land Use Plans and Policies: Brightwater Regional Wastewater Treatment System, of the Final EIS.

The majority of Portal Siting Area (PSA) 30 is located within the City of Brier; however, a small portion is located within the City of Mountlake Terrace. PSA 27 is located within the Cities of Mountlake Terrace, Shoreline and Edmonds and PSA 5 is located within the Mountlake Terrace and Shoreline. PSA 5 has been designated as a primary portal for construction. PSAs 27 and 30 have been designated as

secondary portal sites, meaning construction is not anticipated to be required at these locations. However, this may change due to the relatively long length of the tunnels. A final decision on the need for secondary portals will be made during final design. The following scenarios may result in the use of secondary portals: auxiliary ventilation, deep ground improvement, and supply of backfill grout.

Portal screening that was conducted as part of the Brightwater Conveyance Predesign identified candidate sites to carry forward for further screening. These sites met engineering needs and minimized environmental and community impacts. The Brightwater Conveyance Predesign Level 2 Portal Screening process is described in Chapter 2 and Appendix 2-B, Portal Screening Level 1 and 2 Documentation, of the Final EIS.

Of the final list of portal sites, only one of the sites located within PSA 27 is located within the City of Mountlake Terrace. None of the candidate sites for PSA 5 or PSA 30 are within the City. The candidate site in PSA 27 is currently vacant and is designated Recreation and Park District on the City's zoning map. Public utility facilities are permitted as a conditional use within the Recreation and Park District and are subject to review and approval by City Council (Ord. 2074 § 19.75.070(F), 1995). Please refer to the Impacts and Mitigation section of Chapter 11 for a discussion of impacts and mitigation associated with these portal siting areas.

Response to Comment C11-25

Please refer to the response to Comment C11-24 in this letter.

Response to Comment C11-26

Please refer to the response to Comment C11-24 in this letter.

Response to Comment C11-27

Impacts to parking associated with portal construction are described in Chapter 16 of the Final EIS. King County will work with the City of Mountlake Terrace and affected property owners within the Gateway Place development to ensure that adequate parking is maintained. Please refer to the response to Comment C11-19 in this letter.

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C11-27 The DEIS does not adequately address how possible impacts to, or the removal of, this parking area would be mitigated, in light of the limited buildable parcels available in the City.

C11-28 ***Economic Impact***: As noted, PSA 5 (Unocal) could be impacted by the loss of a parking lot at this location. The impact that loss of parking could have on customer access to businesses in this area, and the possible development in this Portal siting area, could have a significant impact on the annual sales capacity of the businesses located at the Gateway Place. The DEIS does not address any impacts to the specific businesses in this area, as well as the impact of the possible loss of City revenues associated with a downturn in business sales. Furthermore, the City has only 5.6% of its land base zoned for commercial use. The loss of any of the land dedicated for this use could have an impact on the City's revenue, which the DEIS fails to address.

C11-29 ***Impacts to Residential Land***: The DEIS does not provide sufficient analysis of the impacts associated with the potential loss of residential land. The FEIS should recognize that the City's 2012 population target is already hard to meet; any reduction to residential capacity will further jeopardize the City's growth management target under Snohomish County county-wide policies.

C11-30 ***Impacts to Specific Uses:*** The DEIS does not specifically address the potential loss of the Department of Defense Communications facility located in the Gateway area.

C11-31 • **Portal Siting Area 27 (Route 9: 195th Street - Preferred Alternative)**
The City does not feel that the DEIS has adequately address impacts of siting a portal at PSA 27. Approximately half of this area is comprised of a cemetery and Lake Ballinger, with the remainder being multifamily residential development and a golf course. Specific impacts and mitigations are not addressed since a final portal site is not designated in the DEIS.

C11-32 ***Impacts to Residential Land***: The DEIS does not provide sufficient analysis of the impacts associated with the potential loss of residential land. The FEIS should recognize that the City's 2012 population target is already hard to meet; any reduction to residential capacity will further jeopardize the City's growth management target under Snohomish County county-wide policies.

C11-33 • **PSA 28 and PSA 30 (Route 9: 228th Street Alternative)**
Impacts to Residential Land: These two portals siting areas have the highest percentage of residential land use. The DEIS does not provide sufficient analysis of the impacts associated with the potential loss of residential land. The FEIS should recognize that the City's 2012 population target is already hard to meet; any reduction to residential capacity will further jeopardize the City's growth management target under Snohomish County county-wide policies.

Response to Comment C11-28

After a final decision is made on the location for the Brightwater System, King County will work directly with affected jurisdictions and permitting agencies on mitigation strategies and solutions to Brightwater construction and operational impacts. However, increases or decreases in business revenues, tax revenues, and property values are not environmental impacts as defined by SEPA (WAC 197-11) and were not addressed in the EIS.

Response to Comment C11-29

Review of portal screening information indicates that no candidate sites are located within the City of Mountlake Terrace's residential zone. Please refer to the response to Comment C11-24 in this letter.

Response to Comment C11-30

Portal screening that was conducted as part of the Brightwater Conveyance Predesign identified candidate sites to carry forward for further screening. Review of this information indicates that the Department of Defense Communications property is not included as a primary or secondary portal site.

Response to Comment C11-31

Portal 27 has been identified as a secondary portal for the Route 9-195th Street System. As a secondary portal, construction is not anticipated to be required. Please refer to the response to Comment C11-24 in this letter.

Response to Comment C11-32

Please refer to the response to Comment C11-29 in this letter.

Response to Comment C11-33

Please refer to the response to Comment C11-29 in this letter.

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C11-34 ***Transportation Impacts:*** These two siting areas are located along 228th Street – since the exact location of portals within these areas was not identified in the DEIS, it is not possible to fully evaluate the proposed mitigations, especially as they relate to transportation concerns. The City's scoping letter questions access and routing of traffic – the mitigation proposed, the development of a comprehensive traffic management plan, is unsatisfactory since the specifics of this plan are not available for the City to comment on yet.

C11-35 **Other governmental services**
The FEIS needs to be responsive to identifying any impacts to City revenues, for example, form lost business activity that reduces tax revenue, and should identify that mitigation, whether in-kind or cash, will restore any revenue lost to Mountlake Terrace due to the Brightwater project. The FEIS should recognize that the impacts of conveyance routes through Mountlake Terrace include additional city staffing needed for the permitting and inspection process. Mitigation should include the provision of permit fees and other compensation to support the City's capacity to appropriately address a project of this scale.

C11-36 **Conclusion**
We think it is essential, under the State Environmental Policy Act, that the final statement more adequately address the impacts and mitigation, related to Mountlake Terrace, for the 228th Street System and the Unocal System, as identified in this letter. We have also enclosed our previous scoping comments for your consideration within the DEIS review process. Some of the scoping questions were answered in the DEIS, but others were not, and should be addressed in the FEIS. The City requests prompt notification when the FEIS is ready.

Thank you,

Sincerely,

Shane Hope, AICP
Planning and Development Director/SEPA Responsible Official

SH/ac

Response to Comment C11-34

Please refer to Chapter 3 and Appendix 3-B, Project Description: Conveyance, of the Final EIS for a description of proposed primary and secondary portal locations. Additional detail on transportation impacts associated with portal construction is included in Chapter 16 and Appendix 16-B, Transportation Impact: Treatment Plant Sites and Conveyance, of the Final EIS. Impacts will be mitigated in accordance with applicable permitting requirements. Please refer to the response to Comment C11-16 in this letter.

Response to Comment C11-35

After a final decision is made on the location for the Brightwater System, King County will work directly with affected jurisdictions and permitting agencies on mitigation strategies and solutions to Brightwater construction and operational impacts.

Prior to the host jurisdiction granting appropriate permits for construction to begin, King County and the jurisdiction would be able to identify possible construction-related impacts, and determine what requirements King County would be expected to fulfill prior to construction, during construction, and after work is completed.

However, increases or decreases in business revenues, tax revenues and property values are not environmental impacts, and are not addressed in the EIS. Before construction of Brightwater begins, King County will work with local jurisdictions to gain permits and will work to address concerns associated with the construction and operation of Brightwater facilities.

Response to Comment C11-36

Subsequent to publication of the Draft EIS, King County conducted additional studies to address comments received. Please refer to the revised discussions in all chapters of the Final EIS and related appendices. The City of Mountlake

Terrace and all other affected agencies have been notified that the Final EIS is available.

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PLANNING DIVISION

Date: Jan-21-2003
Time: 05:49PM
IP Address: 207.202.240.198

Name and Address:
Shane Hope
23204 58th Ave. W.
Mountlake Terrace, WA
98043-4629

Comment:

These comments represent the original Brightwater scoping letter, sent by the City of Mountlake Terrace, and are to accompany and be incorporated with the DEIS comments that I sent to you by certified mail today.

June 27, 2002

Environmental Planning
KSC-NR-0505
King County Wastewater Treatment Division
201 South Jackson Street
Seattle, WA 98104-3855

Attn: Don Theiler, Manager and SEPA Responsible Official

Subject: City of Mountlake Terrace's Comments on Scoping of Environmental Impact Statement for the "Brightwater" Regional Wastewater Treatment System

Dear Mr. Theiler:

The City of Mountlake Terrace has reviewed the Determination of Significance and Scoping Notice under the State Environmental Policy Act (SEPA) for the Brightwater project. The scoping phase is an opportunity to identify issues to be addressed in King County's Environmental Impact Statement. Given the complex nature of the project, we find the time difference between receipt of King County's notice of the Determination of Significance and the due date for scoping comments (about three weeks) to be inadequate. However, we have prepared the following comments/ questions for King County to address in the Environmental Impact Statement. Since other agencies and citizens have focused on the treatment plant itself, our comments pertain specifically to possible conveyance routes through Mountlake Terrace, unless otherwise indicated.

We recognize that an environmental impact statement under SEPA is not required to address social impacts of projects. However, whether outside of the SEPA process or not, King County should consider the important issue of social impacts resulting from uncertainty or loss affecting homes, businesses, and community facilities within the City of Mountlake Terrace.

Under SEPA, two key issues, related to the built environment in Mountlake Terrace, need special attention. These are: (1) impact of portal locations; given the amount of available land; and (2) impact of the project on the City's revenues and resources. Mountlake Terrace is a small, dense city that is almost entirely built out. With few vacant parcels and only 5.6% of its land base zoned commercial, the City is dependent on existing businesses for sales and admissions taxes to supplement property taxes.

These two key issues, along with other environmental concerns, are arranged below in categories that reflect elements of the natural and built environment, pursuant to WAC 197-11-444.

NATURAL ENVIRONMENT

Earth

Excavation can have major impacts to property, infrastructure, and the environment. Considerable excavation would be required by the Brightwater project. Within Mountlake Terrace: How many tons of soil would be removed and how would they be used? Of the removed soil, how much would be replaced? How many tons of additional soil would be needed for fill? What is the total number of truckloads of earth that would be moved? What type of construction is used to stabilize the walls of the portal? What levels of vibration are associated with this type of construction?

Specifically:

Based on the design consideration known now, what are the likely depths proposed portal locations 5, 6, 26, 27, 28, 29, and 30? Based on the design consideration known now, what are the likely diameters of proposed portal locations 5, 6, 26, 27, 28, 29, and 30?

Based on the likely diameters and depths of each of proposed portal locations 5, 6, 26, 27, 28, 29, and 30, how many ten cubic yard loads would be necessary to haul the material necessary to excavate each of these proposed portals?

What is the anticipated rate, or range of rates, of excavation of the portals in cubic yard per day?

Based on the design consideration known now, how many ten cubic yard loads would be necessary to haul the material excavated produced from the tunnel boring from each of the proposed portal locations 5, 6, 26, 27, 28, 29, and 30?

Geology

Earthquakes occur in this region, resulting in potential hazards. Another kind of geologic hazard in Mountlake Terrace is steep slopes. For deep-tunnel construction, what are the geological constraints and how will they be mitigated? For both cut-and-cover and deep-tunnel construction methods, what is the potential risk to the pipelines from earthquakes? How would construction af the project impact steep slopes, especially with regard to erosion and land slides? How would the Brightwater project be designed to avoid potential damage from earthquakes, erosion, landslides, and other geologic hazards? How would any remaining geologic risks be mitigated?

Soils

Soil types in Mountlake Terrace vary greatly, even in the same neighborhood. Some soils are unstable, for example in the vicinity of 228th St SW and I-5, 228th and 68th AV W. Since the locations of the geotechnical test drillings in Mountlake Terrace do not correspond to the proposed locations of the proposed portal locations, except for proposed portal 5, the test results may not be applicable to the proposed portal locations.

How was it determined that the soils were appropriate for a portal where no geotechnical test drilling was performed? How would soil characteristics be determined for the specific sites that would require excavation? If excavation were to occur in areas with unstable soil, what stabilizing techniques would be used? How would such techniques affect the surrounding property, traffic flow, and street integrity?

What type of construction is used to stabilize the walls of the portal? What levels of vibration are associated with this type of construction?

What levels of vibration are associated with the anticipated methods of tunnel boring?

What is the safe set back distance for building structures from the edge of the portal during construction to preclude the settling of those structures?

Erosion

Soil erosion from construction projects can harm both property and environmental quality. In constructing Brightwater conveyance lines, how would erosion be prevented or mitigated?

Air quality

Air quality is reduced by emissions from trucks and other equipment. During the construction of the conveyance route, massive numbers of trucks will be coming and going. How many truck trips would be likely in or through Mountlake Terrace (including on I-5)? What would be the impact of the trips on air quality? How would this be mitigated?

Dust and particulates from construction can reduce air quality. How will dust be controlled at the construction sites?

Odor

Sewage odors can emanate from portals. What odors can be expected from the portal venting? If sewage odors from the portals can be reduced or prevented, how would this be achieved? Under what conditions would sewage odors be noticeable?

Based on the design consideration known now, which of proposed portal locations 5, 6, 26, 27, 28, 29, and 30 would likely have venting or venting with odor scrubbing equipment?

What other odors can be expected from the portal, both during construction and following construction?

Surface water

Mountlake Terrace includes two major drainage basins: the Halls Creek system which empties into Lake Ballinger and the Lyons Creek system. Both of these systems are part of the Lake Washington drainage basin. Water quality for Lake Ballinger, Halls Creek, and Lyons Creek is important to the environment in Mountlake Terrace and to the entire Lake Washington watershed. How would the Brightwater project affect the water quality of Lake Ballinger, Halls Creek, and Lyons Creek? What mitigation measures would be used to protect surface water quality?

Water absorption/ run-off

During construction of conveyance routes, earth disturbance may lead to increased levels of water run-off. How would water run-off be managed? How would damage to property be avoided?

Ground water

Ground water, which is part of the hydrology of the watershed, can be severely affected by excavation. . . WWhat would be the impact of deep tunneling on underground water flows? What affect wouldill the construction of portals and tunnels have on aquifer(s), wells, and stream flows? How would the aquifer(s) be protected from contamination or draining into the portals and tunnels that could result from construction? How will ground water that is intercepted by by portals, tunnels or trenchesing be restored? What mitigation methods would be used to avoid disrupting the flow of ground water?

Plants

Trees and other plants are important environmental and visual features in Mountlake Terrace. For example, trees absorb rainwater and help filter the air. During construction of conveyance routes, trees and other plants may be damaged. How would this be mitigated?

If a portal site were chosen that contains trees, landscaping, or other vegetation, how would plants on these sites be affected? What mitigation measures would be used to ensure that plantings are not reduced in amount or quality?

Habitat for & diversity of species

Within several of the possible conveyance routes, parks and public open space provide habitat for diverse species of birds and small wildlife. Wetlands on both public and private property also contribute to habitat. The community has taken actions to restore and protect Lake Ballinger, Halls Creek, and Lyons Creek and to encourage habitat for aquatic life. How would Brightwater construction affect the habitat for fish and wildlife, including bird species, in public parks and open space areas? How would wetland habitat be affected? How would habitat be affected within and along Lake Ballinger, Halls Creek, and Lyons Creek? How would the Brightwater project affect wild salmonid? How would fish habitat be protected to comply with the Endangered Species Act?

BUILT ENVIRONMENT

Noise

Construction of a conveyance system would create noise from the operation of equipment. Especially in residential areas, noise would impact the environment for people. What is the likely level of construction noise that woud be generated? Besides following the City's regulations to control noise, would the Brightwater project use any other mitigation measures?

What is the safe set back distance for building structures from the edge of the portal during construction to preclude nuisance and damaging vibration and noise.

What level of noise is associated with the portal vents? If the portal venting has odor-scrubbing equipment how big of a structure is necessary to house it? What level of noise is associated with it? How would it be mitigated?

Risk of explosion

A citizen concern was raised that wastewater conveyance systems have some risk of explosion. What is the likelihood of explosion in the Brightwater conveyance system?

Releases to environment of toxic or hazardous materials

The use of toxic or hazardous materials is a concern to some citizens in Mountlake Terrace. Would the conveyance routes result in the use or release of toxic or hazardous materials? If so, how would this be mitigated? What kind of hazardous or toxic materials would be released from construction equipment during project construction?

Land and shoreline use

Mountlake Terrace is a small, compact city with 20,362 people in four square miles. Under the Brightwater proposal, residential and commercial land use could be affected in at least two significant ways, first from the construction itself and second, from the siting of portals.

Regarding the construction phase:

How would the construction phase of Brightwater impact residential land use in Mountlake Terrace? What mitigation measures would be used? How would the construction phase impact commercial uses in Mountlake Terrace? What mitigation measures would be used to ensure that businesses remain operable at current sales levels?

Regarding the siting of portals:

Given that Mountlake Terrace is nearly built out and has very few buildable parcels left, every acre is important. Portals for the Brightwater project would use up land—one to two acres for each portal. King County has indicated that either one or two portal sites would be located in Mountlake Terrace.

For a typical single-family area of 7200 square foot lots, each one-acre portal site would result in the loss of 6 homes, while a two-acre portal site would result in the loss of 12 homes. In the year 2000, an average of 2.47 people was calculated for each residential unit in Mountlake Terrace. Thus, if one one-acre portal site were located in a single-family residential area, approximately 15 people would be displaced. If two two-acre portals were located in a single-family residential area, 24 homes would be lost and approximately 59 people would be displaced. If a two-acre portal were located in a multi-family area, substantially more homes would be lost and even more people would be displaced. Besides sites that actually are used for a portal, residential land adjacent to portal sites may be impacted by a portal siting. How could decisions about portal sizes and locations ensure the least impact on residential uses? What mitigation measures for portals would be employed to minimize loss of residential land use?

Each one-to two-acre portal site could dislocate several businesses. Isolated businesses adjacent to portal sites would also become less viable. Mountlake Terrace has only 5.6 % of its land zoned for commercial. Since Mountlake Terrace is mostly built out and has very few sites remaining for commercial land uses, all commercially zoned parcels are needed to ensure that the City retains adequate commercial land uses. Furthermore, a reduction in business activity would be a hardship for many people: the owners, employees, adjacent businesses that would lose economic continuity from the elimination of other businesses, and for the whole community, including the City government which depends on much-needed tax revenues from local businesses to help provide City services. (The latter point will be addressed in the section "Governmental services and utilities.") Mountlake Terrace has planned for full utilization of commercial land uses to result in economic revitalization of the downtown area and in healthy business activity in the Gateway area. How would King County locate portals to avoid reducing the amount of land available in Mountlake Terrace for commercial uses? What mitigation measures would be employed to reduce impacts to commercial uses adjacent to portal sites?

We recommend that the conveyance routes, especially as related to siting portals, within the City of Mountlake Terrace be reconsidered. This means specifically that King County should work cooperatively with the City to either: (a) avoid locating portals within or adjacent to Mountlake Terrace; or (b) consider new portal siting areas, which would be somewhat different than those currently identified by King County and which would reflect the least possible impact to land uses in Mountlake Terrace. Finally, if the identified portal siting areas do not change, special efforts should be made so that decisions about portal locations and sizes ensure the least impacts to land uses within the City.

Mountlake Terrace is concerned that land uses fit with the neighborhood. What are the criteria for deciding whether a portal is filled or whether it is capped? Based on the design considerations known now, which of proposed portal locations 5, 6, 26, 27, 28, 29, and 30 would likely be capped and which would be filled? If a portal is capped instead of filled, what are its land use limitations? What have been the typical uses of capped portals? Please provide examples. Brightwater Conveyance materials state that one to two acres is necessary to site a portal. What is the practical minimum width of a portal site? If a portal is capped, what is the safe set-back distance for building structures from the edge of the portal following construction?

Easements are another land use issue that should be considered. Lots within Gateway Place, including Lot 2, have easements that contain communication facilities that are part of a strategic Department of Defense communication network. What impact would Brightwater construction have on this network?

When a privately owned parcel has a tunnel bored under it for Brightwater conveyance pipelines, how are the easement rights to locate it there secured from the property owner? Does the easement have a width or is the easement described on another basis?

In Mountlake Terrace, the shoreline of Lake Ballinger provides access to the lake and is used for public and private recreational purposes. How would shoreline use be impacted by the Brightwater project? If impacted, what mitigation measures would help?

Relationship to existing land use plans and to estimated population

Based on existing county-wide planning policies and the City's comprehensive plan, Mountlake Terrace has a population target of 22,100 by the year 2012. This is about 1700 more people than the current population. Given that the City has few vacant parcels remaining, how would the Brightwater project affect the City's ability to accommodate more people? How would King County mitigate any impacts to the population capacity?

The City's comprehensive plan, financial policies, and economic development strategy all call for economic development and increased business activity in existing commercial areas, including the Gateway area and the downtown. How would the Brightwater project disrupt the ability of existingbusinesses to operate at current volumes and, as the City's plans project, at increased volumes? How would any disruption to business activity be mitigated?

As stated in the City's comprehensive plan, east-west access to the downtown is a key issue for downtown revitalization. Yet one of the proposed conveyance routes is in the vicinity of 228th Street SW, which provides east-west access to the City's downtown. How would the Brightwater project impact east-west access? How would it affect the ability of the downtown area to revitalize, as planned?

The 56th Avenue West Beautification plan calls for increased landscaping and pedestrian amenities along 56th Avenue. Through community investment, the plan has been partially fulfilled. How would the Brightwater project affect implementation of the plan and its goals?

Housing

The City's comprehensive plan calls for preserving the existing housing stock. How would the Brightwater project be consistent with this policy? If there is any inconsistency, how would it be mitigated?

Community residents have indicated that their homes are very important to them, in part as representing a substantial financial investment and, in part, as reflecting their lifestyle and family values. How would the Brightwater project address the preservation of housing investments for homeowners and renters? How would it support the community's emphasis on maintaining residential lifestyles? If any disruption of residential lifestyles or displacement of residents occurred, how would King County compensate affected residents?

Many of the homes near proposed portal site 28 in Mountlake Terrace are cinder block homes, with slab on grade floors, and purportedly are susceptible to cracking. What precautions will be taken to preclude damage due to vibration and ground settlement resulting from construction of Brightwater facilities?

Aesthetics

The community has been working to increase the attractiveness of Mountlake Terrace, to protect property values, and to prohibit nuisances. What does portal venting look like and what are its dimensions? How would the appearance of portals and portal venting fit within a neighborhood?

The community also takes pride in its parks, trails, open space, and evergreen trees and is concerned about any impact on these features, whether temporary or long-term. How would Brightwater portal locations preserve the beauty and pleasure that citizens find in the existing parks, trails, open space, and abundance of evergreen trees?

Privacy and tranquility are aesthetic characteristics that are provided by landscaping and grounds throughout the community. How would these be affected by construction activities of the Brightwater project?

Recreation

Mountlake Terrace has a regional recreation facility (i.e., the Mountlake Terrace Recreation Pavillion) which offers swimming, exercise, and sports to thousands of people. How would the Brightwater project avoid impacting access to anduse of the Recreation Pavillion and its associated grounds?

The City has existing and planned parks and trails for recreation. How would the Brightwater project impact the use of both existing and planned parks and trails?

Historic and cultural preservation

Historic and cultural preservation is actively supported by citizens, including by the local historical society. The City of Mountlake Terrace anticipates celebrating its 50th anniversary of incorporation, with special events and ongoing activities, during the entire year of 2004. A 50th-anniversary committee has begun planning the 2004 activities. This is expected to increase local interest in historic preservation and generate ideas for saving or restoring special places. How would the Brightwater project impact such activities?

Transportation

Based on the design consideration known now, how many vehicles trips will be necessary to mobilize the equipment and field office, deliver materials to the site, haul unused material and waste from the site, and demobilize the equipment and field office for each of the proposed portal locations 5, 6, 26, 27, 28, 29, and 30?

How will King County compensate the City of Mountlake Terrace for reduced life and damage to roadway pavements if City streets are used for haul routes for the Brightwater Project? Will an assessment of roadway pavements along haul routes be performed before and after construction? Many of the streets within Mountlake Terrace that could be likely haul routes to portal sites are local streets with minimal pavement thicknesses. The pavement damage to these local streets could be significant.

Transportation systems

Mountlake Terrace is served by several Community Transit bus routes. Use of buses is essential for people who cannot or should not drive their own cars. It is also an important convenience for other people and keep more cars from being on already-crowded roads, especially I-5. How would the use of Community Transit buses be impacted by the construction phase of Brightwater, especially from the Unocal-North Deep Tunnel Conveyance Corridor?

Vehicular traffic

228th Street SW provides a major east-west corridor is the principal connection between Mountlake Terrace and Brier, and provides that community with I-5 access. Operational width for cut and cover construction is reported in Brightwater materials to be 50'. This would effectively close a roadway to traffic. There are few alternative east-west routes between MLT and Brier. The average daily trips for 228th between MLT and Brier is over 11,000. How would the Brightwater impact traffic flows along 228th Street SW? What would be the detour routes while construction is in progress between Brier Road and 44th Avenue West?

228th Street SW, between 53rd and 56th, also provides the sole access to the newly constructed Terrace Park Elementary School and the City's Recreation Pavilion. How long would access to these facilities be blocked?

226th Street SW is a dead end road west of 48th Avenue W. The 228th Near Surface Conveyance Corridor option identifies this as location for cut and cover construction. How will residents, service vehicles, and emergency response vehicles access this area during construction that requires the full width of the roadway?

State Route 104, located just south of Lake Ballinger, is a multi-lane arterial that serves several communities. Its intersection with 244th Street SW/15th Avenue NE is the principal access to the

Gateway Place commercial area. How would the Brightwater project it impact traffic flows and access to Gateway Place?

244th Street SW connects to SR and is fronted by numerous commercial uses. It provides the sole access to the Gateway Place commercial area in Mountlake Terrace. How would the various Brightwater conveyance options impact traffic flows and access to local businesses and Gateway Place?

56th Avenue W. is the major north/south route through the center of Mountlake Terrace. 236th Street SW is a major east/west route and that principal corridor to I-5 for the southern half of Mountlake Terrace and Brier. 56th has a daily traffic volume of about 10,000. 236th have an ADT of about 12,000. How would the various Brightwater conveyance options, especially the Unocal – North Deep Tunnel Conveyance Corridor, impact traffic flows?

58th Avenue W. provides north/south access to City Hall, the library, and various homes and other uses. How would the various Brightwater conveyance options, especially the Route 9 – 228th Near Surface Conveyance Corridor, impact traffic flows?

Numerous other streets could be impacted by construction activity. What impacts are likely and how would they be mitigated?

Parking

The Gateway Place commercial area in Mountlake Terrace falls within the 70-acre circular siting area for proposed portal 5. Although there is currently no structure on Lot 2, the businesses in that commercial area use Lot 2 for parking, until such time that a new building is located there to include structured parking. This is in accordance with the Gateway Place Binding Site Plan that provides for the reciprocal use of parking facilities among the lots to meet commercial needs and City standards. At this time, parking utilization is often over 100%, i.e., cars are parked in drive aisles. Any loss of parking in Gateway Place would have a significant negative impact on businesses there. Quantitatively, what would be the operational and financial impact to these businesses if Lot 2 or another lot within Gateway Place took away required parking and utilized it for a portal site? How could parking impacts to Gateway Place be avoided or mitigated?

A highly-used park and ride lot is located just off the 236th Street exit from I-5 and is served by Community Transit. How would this facility be impacted by Brightwater construction activities? How can any impacts to this facility be avoided or mitigated to ensure adequate bus circulation and adequate parking remains for commuters?

Parking is scarce in many areas of the City, yet, during the construction phase of Brightwater, workers may need parking. How many personnel, e.g., workers, equipment operators, mechanics, engineers, etc., on average will be at the portal site on a typical day during construction? What would be the peak number of personnel? Where will these vehicles be parked? Will vehicle parking for personnel be provided on the portal site? For the cut-and-cover method, how much parking would be needed for workers and how could the impacts of parking be mitigated?

Movement/ circulation of people or goods

Walking and bicycling are important ways for people to get around within the City. How would pedestrian activities be impacted by the construction project? How would impacts be mitigated?

If a home or business is purchased by King County for a portal site, will the fair market value settlement include relocation expenses? Will it include compensation for inconvenience, such as missing work to move the household?

Traffic hazards

Would any portal sites or construction block roadways or encroach on public right of way?

Public services and utilities

The City of Mountlake Terrace has adopted a five-year financial plan with policies that emphasize the need to spend carefully and maximize its tax base in providing public services. Given that most of the City is built out and only 5.6% of the City's land is commercial, its potential revenues from taxes are limited. Any reduction in tax revenues would create serious impacts on Mountlake Terrace's ability to provide services to its residents and businesses.

The Gateway Place area, which falls within the 70-acre circular siting area for proposed portal 5, is a substantial contributor to City revenues. Loss of business activity in this area, whether due to short-term construction or the siting of portals, could result in significant lost City revenues and city services.

Currently, city services, including for police, fire, recreation, engineering, permitting, planning, code enforcement, public works, and emergency preparedness, are paid in whole or part from tax and fee revenues. Any loss of revenue from commercial or residential use would impact the City's ability to provide services. What is the estimated reduction in commercial real estate taxes, sales and admission taxes, and other revenue to the City of Mountlake Terrace from each conveyance route? How would loss of City tax or fee revenue from existing commercial uses be avoided or mitigated?

The City anticipates that, give the continuing budget reductions and increasing demands that the City faces, future gaps between revenues and services can be at least partly met by additional tax revenues from future infill of the few remaining commercial sites, such as those in the Gateway area (near 244th Street SW). How would these opportunities be preserved?

What is the estimated number of homes that could be purchased within the 70 acre circular siting areas for proposed portal 28? What is the estimated reduction in real estate taxes and other revenue to the City of Mountlake Terrace? How could any losses to the City be made up by King County?

The Gateway Place commercial area in Mountlake Terrace falls within the 70-acre circular siting area for proposed portal 5. If either construction activity or a portal siting resulted in the closure of existing businesses in Gateway Place, what would be the estimated reduction in real estate and other revenue to the City of Mountlake Terrace? How would any losses be made up by King County? Conveyance routes appear to affect City Hall, Fire Station, and the Library. What would be the impacts to these facilities and how would they be mitigated? The City is also planning to replace those facilities within the next several years. How would Brightwater affect siting of any replacement facilities and what mitigation is possible?

During the planning and construction phase of Brightwater conveyance routes, the workload for City staff would be increased, especially with regard to planning, permitting, construction, and inspection of the proposed facilities within the City. One possible mitigation for the planning and construction phase is adequate funding by King County for additional City resources to manage the City's process and ensure community issues are adequately addressed. How would King County propose to mitigate the increased workload to the City of Mountlake Terrace caused by this project?

One possible way to ensure mitigation for impacts to the City's services, revenues, and other issues is the development of an interlocal agreement between Mountlake Terrace and King County.

Fire

See "Public service and utilities" section.

Police

See "Public service and utilities" section.

Schools

Several public schools are located within Mountlake Terrace. How would Brightwater construction affect student walking routes to schools? What other impacts to schools would be caused by Brightwater construction? How would such impacts be mitigated?

Parks or other recreational facilities

The City is putting nearly $2 million in improvements to the Recreation Pavillion. About 75% of the Pavilion's costs are covered by user fees. The only access to the City's Recreation Pavilion is via 228th Street. Yet, the proposed 228th Near Surface route appears to include cut and cover construction just east of the Pavilion and south of it in 228th , which would eliminate access to the Pavilion for recreation users. How would King County compensate the City of Mountlake Terrace for lost revenue due to the City not being able to provide recreation services?

Also see "Recreational" section.

Maintenance

Maintenance is an important aspect of ensuring that a wastewater facility does not cause unnecessary problems within a neighborhood or to its customers . How often should the venting equipment for portals be maintained?

Aside from the structures that would house the venting equipment, wWho own and will maintain the portal sites upon completion of construction?

If a portal is not filled and provides access to underground facilities, what are the typical type of inspection and maintenance activities that are performed, and how often is access necessary?

Water/ storm water

The City's water utility provides wWater service is provided to all properties within the City of Mountlake Terrace. How would Brightwater construction activities impact the City's water distribution system service? What mitigation measures would be taken to address these be taken regarding any such impacts?

How would water from portals be treated prior to discharge into the natural drainage ways or into storm drains?

Sewer/ solid waste

Increasing the capacity for wastewater (i.e., sewage) treatment is the purpose of the Brightwater project. The Growth Management Act directs cities, not counties, to be the primary provider of urban services, including wastewater treatment.

The City of Mountlake Terrace is a part-owner of in the Edmonds Wwastewater Ttreatment Pplant, along with the Olympic View Water and Sewer District, the Shoreline Wastewater District, and the City of Edmonds. It is an an efficient, well-run facility that was upgraded to secondary treatment in 1991. Mountlake Terrace's d Debt service on the plant will be retired in 2006, allowing sewer rates to remain relatively stable for its residents, while allowing for funding in the future for projects to repair and rebuild its aging collection system.

Olympic View, Shoreline Wastewater, Edmonds, and Mountlake Terrace own all of the plant's allocated treatment capacity. The plant currently utilizes 55% of its capacity treating the sewage flows of its four owners. The owner's believe that the plant has adequate capacity for their needs for the foreseeable future. A portion of the excess capacity is currently used to treat King County's sewage flows from the Richmond Beach area, in accordance with the October 6, 2000 Agreement for Sewage Treatment between Edmonds and King County. Under this "sewage swap" agreement, the volume of sewage pumped from the Richmond Beach to the Edmonds Treatment Plant is matched by an equal amount of sewage from the "Edmonds East" area that is directed into the King County sewage system. Currently, though, both Richmond Beach flows and "Edmonds East" flows are treated by the Edmonds Wastewater Treatment Plant. The arrangement of treatment will be in effect until 2012, although King County can activate the swap up to 6 months a year. Following year 2012, the swap will be in effect full time until 2036. No

payments are exchanged between King County and Edmonds for the reciprocal treatment of equal amounts of sewage.

If the Brightwater treatment facility is located at the Unocal site in Edmonds, will sewage from Richmond Beach continue to flow to the Edmonds Treatment Plant until 2036 in accordance with the Agreement for Sewage Treatment between Edmonds and King County?

The Determination of Significance and Scoping Notice for the Brightwater System contains maps that show the Richmond Beach area and Mountlake Terrace in the service area of the King County sewage system. In the context of the Brightwater project, the implication is that Richmond Beach area will flow to Brightwater as well as the "Edmonds East" sewage collection area, which includes Mountlake Terrace. This is contrary to the October 6, 2000 Agreement for Sewage Treatment between Edmonds and King County. The maps are misleading because sewage from the Richmond Beach area flows to the Edmonds Treatment Plant. Also, they are misleading because King County does not provide collection services within the "Edmonds East" area. To accurately reflect the areas to be provided treatment from Brightwater, the Richmond Beach area should be eliminated from the maps, and the entire Edmonds East area should be shown, not just the Mountlake Terrace portion of it. Alternatively, if the map is to depict the service area of King County, irrespective of where sewage treatment is provided, the maps should exclude the Mountlake Terrace service area and portions of the Shoreline Wastewater District that flow to the Edmonds Treatment Plant and to the Ballinger Pump Station. Corrections to the maps have been requested previously by Edmonds and Mountlake Terrace. Why has King County persisted in prolonging this misinformation?

The Brightwater Scoping Notice identifies an option at the Unocal site to allow "...expanding plant capacity up to 72 million gallons per day to incorporate flows from Edmonds and/or Lynnwood." Would the intention of expanding the proposed Brightwater treatment plant be to replace Mountlake Terrace's treatment capacity at the Edmonds Wastewater Treatment Plant with capacity at the proposed Brightwater facility at Unocal? If so, how would this affect Mountlake Terrace's existing interlocal agreement with Edmonds for sewage treatment? How would it affect the operation of the Edmonds Wastewater Treatment Plant facility? How would it affect sewer rates for Mountlake Terrace residents? If the Brightwater facility anticipates taking over existing city treatment systems, how would this be consistent with the Growth Management Act which directs cities, not counties, to be the primary provider of urban services, including wastewater treatment?

The City's sewer utility provides sewWer service to nearly all properties within the City of Mountlake Terrace. How would Brightwater construction activities impact the City's sewer collection system service? What mitigation measures would be taken to address these be taken regarding any such impacts?

If the Brightwater treatment facility is located at the Unocal site in Edmonds, will sewage from Richmond Beach continue to flow to the Edmonds Treatment Plant until 2036 in accordance with the October 6, 2000 Agreement for Sewage Treatment between Edmonds and King County?

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requested before by Edmonds and Mountlake Terrace. Why has King County persisted in prolonging this misinformation?

Other governmental services or utilities

A daycare center at the City's Recreation Pavilion serves well over 100 children. How would this service be impacted by the construction of conveyance routes and how could such impacts be mitigated?

Sincerely,

Shane Hope, AICP
Development Services Manager and
SEPA Responsible Official

SH/ac

cc: Mayor Cordova
City Manager Connie L. Fessler
City Engineer Will Van Ry

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C10
CITY OF SEATTLE

FINAL
ENVIRONMENTAL
IMPACT STATEMENT

Brightwater
Regional Wastewater
Treatment System

COMMENTS AND RESPONSES

City of Seattle

Gregory J. Nickels, Mayor

Seattle Public Utilities
Chuck Clarke, Director

January 21, 2003

RECEIVED
JAN 21 2003
ENVIRONMENTAL PLANNING DIVISION

Mr. Don Theiler
Manager and Responsible SEPA Official
King County Wastewater Treatment Division
201 South Jackson Street – Suite #505
Seattle, WA 98104-3588

Dear Mr. Theiler:

C10-1 Thank you for the opportunity to comment on the Draft Environmental Impact Statement (EIS) for the proposed Brightwater Treatment System.

The City of Seattle believes that the "No Action Alternative" must be revised to accurately reflect the most current forecasts of growth and water use. Conditions have changed significantly since the original assumptions were used to project future wastewater flows. These changes indicate that base flow and average wet weather flow projections should be reduced. Taking into account regional water conservation savings and the new 2002 Puget Sound Regional Council (PSRC) forecast, the Purpose and Need for a new wastewater treatment plant may not be justifiable until 2030.

Increased water conservation efforts have lowered per capita water use levels in the Metro service area. Less per capita water use means less water per household and per employee flowing into the region's sewer system. Current projections are for a continuing downward trend in per capita and per employee water use through at least 2020. These projections are based on the savings from the 1993 Plumbing Code and implementation of cost-effective conservation programs documented in the 2001 Central Puget Sound Regional Water Supply Outlook. These changes have profound implications for the forecast of average wet weather flows, which define the timing for needed treatment plant expansion.

Population growth projections have also changed. The original RWSP forecast developed to support the Purpose and Need in the Draft EIS calls for a population by 2030 that is three percent higher than the 2002 PSRC forecast. Additionally, a significant discrepancy exists between the RWSP forecast and PSRC population forecasts for 1990, 2000, and 2010. This discrepancy results in a higher growth projection in the Draft EIS than would be indicated by using the 2002 PSRC numbers.

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Response to Comment C10-1

This response summarizes the process used by King County to project wastewater flows. The response includes an overview of how population forecasts are used; how base wastewater flow, average wet-weather flow, and peak flow are determined; how wastewater flow factors are determined; and how this information is modeled hydraulically and used to design a wastewater system, including treatment and conveyance components.

Population and Employment Forecasts

Population and employment forecasts are used to estimate the wastewater flow expected to be conveyed and treated by facilities in the wastewater service area through 2030 and at saturation in 2050. Population and employment forecasts, and their effect on wastewater flows, are crucial to determining which facilities will reach capacity and when. King County relies on population and employment information developed by the Puget Sound Regional Council (PSRC) through 2020. For the decades 2030, 2040, and 2050, King County projects population and employment based on a trend analysis of the earlier decades. This is done to evaluate the sizing of phased facilities because the expected life of these facilities extends beyond the PSRC projections and the ultimate design must be considered during the initial design.

Puget Sound Regional Council Population and Employment Forecasts

In the early 1990s, PSRC developed population and employment forecasts through 2020 for four counties near Puget Sound within the Urban Growth Area. These forecasts, which were adopted by the PSRC in 1995, were based on the 1990 census data. During the mid-1990s, King County used the PSRC data through 2020 and developed forecasts for the years 2021 through 2050 by plotting population data using an exponential growth function. These forecasts were the basis of flow estimates presented in the 1997 *Draft Regional*

Wastewater Services Plan (RWSP). Based on comments received on the *Draft RWSP*, King County modified its approach and the projections. The effect of the revision, which employed a linear trend function, was to lower the population forecasts by approximately 9 percent in 2030. A detailed description of this approach is given in a March 1998 technical memorandum titled *Population Forecasts, Flow and Loading Projections Methodology Comparison* by HDR Engineering, Inc.

The population forecasts modified in 1998 were the ones used to estimate flows and capacity needs for the RWSP. The PSRC revises its projections from time to time, and King County examines them to determine if there are any significant changes. So far, there have not been any significant differences in the overall numbers.

The PSRC has recently published new projections that are based on the 2000 census. King County takes the population and employment numbers from its service area, which includes residential, commercial, and industrial population, and adjusts the numbers to reflect sewered and unsewered areas over time. King County assumes that all areas within the Urban Growth Area will be sewered per the Growth Management Act and local comprehensive plans. At present, there are many customers in the wastewater service area that may receive public water service but are not served by sewers; for example, much of the rapidly growing Sammamish Plateau is currently unsewered, but in time it will all be sewered. King County's wastewater projections assume the entire wastewater service area will be sewered by 2020. This is a significant factor that is often overlooked by analysts reviewing King County's flow projections.

When the sewered population is factored into the recently available 2002 PSRC Forecast Analysis Zone (FAZ) information, we get the projections listed in Table 1. The table compares King County's 1998 sewered population and employment forecasts with the 2002 PSRC forecasts that are adjusted for the sewered population.

Table 1
Comparison of Population and Employment Forecasts

Decade	Sewered Population 1998 King County Projections	Sewered Population: 2002 PSRC FAZ for King County's Service Area
1990	2,053,746	1,981,643
2000	2,385,578	2,380,283
2010	2,756,598	2,688,001
2020	3,129,189	3,179,354
2030	3,438,937	3,354,826
Percent change 1990–2030	67	69

* With sewered populations considered

Table 1 shows that King County's 1998 projections of sewered population grows by 67 percent from 1990 to 2030 compared to 69 percent for the same period using the 2002 PSRC data adjusted for sewered population in the King County Service Area. The difference in overall change between forecasts over the 40-year period is insignificant with respect to the County's flow projections.

Design Parameters for Wastewater Systems

Wastewater conveyance and treatment systems are designed using a number of different parameters aimed at ensuring that the effluent discharged from the treatment plants meets the federal and state standards for secondary treatment. These parameters also ensure that standards are met for preventing sanitary overflows in separated systems and for limiting permitted overflows in combined systems. The treatment plants are sized according to a number of different conditions that vary, largely due to weather-related factors and treatment plant processes.

Treatment Plant Sizing

If treatment plants were sized to treat peak flows to the most stringent secondary effluent limits, the plants would be much larger and more expensive than those in operation today. Instead, jurisdictions such as King County, negotiate a series of parameters and standards for the

treatment plants that recognize and allow for a particular range of operating conditions under both dry- and wet-weather conditions for both the hydraulic and solids handling requirements. These parameters include flow rates for average wet-weather, average dry-weather, maximum monthly, weekly, daily, and hourly flow rates, as well as varying BOD and TSS concentrations and loadings based on dry and wet weather. These parameters drive the designs of each of the processes to ensure there is adequate treatment under varying flow and weather conditions.

Historically, King County (formerly Metro) used average wet-weather flow (AWWF) as a summary parameter to evaluate how it is meeting capacity limits at the treatment plants, even though there are several parameters that must be monitored and tracked. In the 1980s, the South Plant expansion was triggered based on reaching the average wet-weather flow parameter. AWWF continues to be one of the design parameters used to summarize a range of parameters that track plant capacity.

Current NPDES permits require that King County submit a plan and schedule for maintaining capacity to achieve permit limits when the plant reaches 85 percent of any one of the design criteria for 3 consecutive months or when the projected capacity increases would reach design capacity within 5 years, whichever occurs first. The design criteria include average flow for the maximum month, influent BOD (biochemical oxygen demand) loading for the maximum month, or influent TSS (total suspended solids) loading for the maximum month. King County has already met the threshold at both the South Treatment Plant and West Point Treatment Plant. Accordingly, King County submitted the Regional Wastewater Services Plan to comply with this permit condition. The Washington State Department of Ecology (Ecology) approved this plan and is monitoring its implementation.

Designs for the West Point and the South Treatment Plants are different, because West Point includes a combined system and handles some storm flows that do not have to meet secondary treatment requirements. West Point is able to blend primary treated flows with secondary flows during wet-weather events. At present, the South Treatment Plant is allowed a smaller amount of blending. The permits and standards for each of the treatment plants have been established through a design review process and negotiation with Ecology. For example, West Point is required to have secondary capacity to treat 2.25 times its AWWF; the South Plant is required to treat 1.8 times its AWWF. The Orange Book (Washington State's sewage design manual) provides guidance for designing treatment plants to meet the federal and state secondary treatment requirements, but each of King County's treatment plants and subsequent upgrades has had unique design factors that have been approved by Ecology. Design factors must not only address wastewater quantity but also quality of the discharge. Some portions of the treatment plant are amenable to phasing, so they are usually built in increments to handle the hydraulic peak as the region grows.

Conveyance System Sizing

The sizing of the conveyance system is based almost solely on being able to transport peak flows. For the County's conveyance system, King County proposed, and Ecology accepted, the use of a 20-year design storm to handle peak hydraulic flows in the separated system. The conveyance system is usually built to handle this peak flow at full buildout unless there is a way to phase the conveyance.

Base Sanitary Flow

Base sanitary flow is wastewater flow generated from households and commercial and industrial businesses. Base sanitary flow projections are combined with infiltration and inflow (I/I) components to estimate dry-weather and wet-weather flows. Wet-weather flows and waste loadings are compared with the design capacities of wastewater facilities to determine when facilities will exceed their capacities, thus predicting system constraints over the planning period.

Methodology for Base Flow

To develop base sanitary flow projections, King County combined the population and employment forecasts by service basin with King County sewered area maps to estimate the percent of the population served by sewer. Per capita unit wastewater flow factors were then applied to the sewered population estimates to generate base sanitary flow forecasts. Base sanitary flows were generated using a spreadsheet model developed as part of the RWSP. The model forecasts population,

employment, and base sanitary flows by sewer basin using the PSRC population and employment forecasts as input.

Unit Flow Factors

Once sewered population by service basin was estimated, a per capita unit flow factor was applied to determine base sanitary flows. There are three unit flow factors used to estimate the base sanitary flows.

- Residential: 60 gallons of wastewater per capita per day (gpcd)
- Commercial: 35 gallons of wastewater per employee per day (gped)
- Industrial: 75 gallons of wastewater per employee per day

The residential flow factor of 60 gpcd has been used historically by King County, and formerly Metro, to develop both the South and West Point systems. The industrial and commercial flow factors of 75 and 35 gped, respectively, were derived based on permitted flow for industrial users and on modeling and measured flows at the plants for commercial users. Using measured flows along with King County's hydraulic model, and the assumption that residential flows equal 60 gpcd, the relationship between industrial and commercial flow factors was established.

To determine if the unit flow factors were reasonable, King County compared the base sanitary flow estimates with dry-weather flows measured from each treatment plant for 1990. Dry-weather flows include base sanitary flow plus dry-weather infiltration and inflow (I/I). The estimated flows derived from population and sewered area compared closely with the measured flows.

When King County developed the RWSP, alternative unit flow factors were examined by modeling wastewater unit flow factor changes as a result of water conservation, pricing, and the plumbing and building codes. The County's analysis of the varying flow factors indicated that the base sanitary flows could decrease from 10 to 18 percent using a moderate to aggressive water conservation program. While this sounds significant, it is important to understand that base flow is not a major factor in the timing and sizing of a treatment plant or of its associated conveyance system. Base flow represents less than 20 percent of the peak 20-year storm flow, which is King County's design standard. The potential conservation measures resulted in peak flow reductions in 2020 from 2 to 4 percent. Peak flows at 2030 are projected to be 608 mgd in the separated portion of the system. This will not change the timing or size of any facilities currently planned. Based on this analysis, and the fact that water conservation benefits are uncertain because they are not mandatory, the flow factors were not adjusted to include reliance on water conservation.

The City of Seattle recently suggested that industrial and commercial flow factors are significantly lower than those used by King County. Seattle's flow factors are based on what we believed to be the results of water conservation efforts over the last decade that could reduce the need for additional sewer capacity in the future. Residential consumption predicted by Seattle remains similar to the King County flow factor, so there is no adjustment warranted for residential. Seattle's proposed flow factor for 54 gpcd is similar to the 10 percent base flow reduction analysis discussed above. The corresponding 2 percent reduction in peak flow is small enough that it is not recognized within the accuracy of the actual monitoring. Additionally, this potential reduction of 2 percent of the peak flow is not enough to risk underbuilding any wastewater facilities unless they can be cost effectively phased. Flow information from the County's treatment plants indicates that water conservation is not having a significant effect on wastewater flows. This is probably because much of the conservation taking place is in outdoor water use, such as reduced lawn watering or car washing, which is water that usually does not reach the sewer system. The volumes of the potential commercial sector reductions are so small that we cannot see them in the volumes handled by the wastewater system.

King County agrees that there is a reduction of water use in the industrial sector, though more work needs to be done to refine the industrial flow factor. However, it is important to note that any reductions in estimated industrial flow will occur primarily in the southern portions of the service area and will not benefit the north service area where King County is reaching hydraulic capacity most quickly. Even so, our estimates show that using a 50 gpd flow factor, we would only see a 4 mgd reduction in base flows and average wet-weather flows, systemwide.

While King County is interested in further evaluating these factors, the projected water conservation benefits do not warrant any adjustment in treatment or conveyance sizing.

Average Wet-Weather Flow, Peak Flow, and Solids Loading Methodology for Average Wet-Weather Flow

King County derives AWWF for the base planning year of 1990 by measuring flow at the treatment plants over several years and adjusting these flows using rainfall data to reflect an average wet period during historical conditions. This approach is unique to King County but has been approved by Ecology. The South Treatment Plant Service Area collection system is a separated system, and its AWWF definition is the average of all flows during the months of November through April (6 months). For the West Point collection system, which has combined systems, the AWWF is defined as the average of all non-storm flows during the months of November through April. The projections for AWWF for the entire system are shown in Figure 1.

Figure 1
Estimated Flows and Capacity Needs

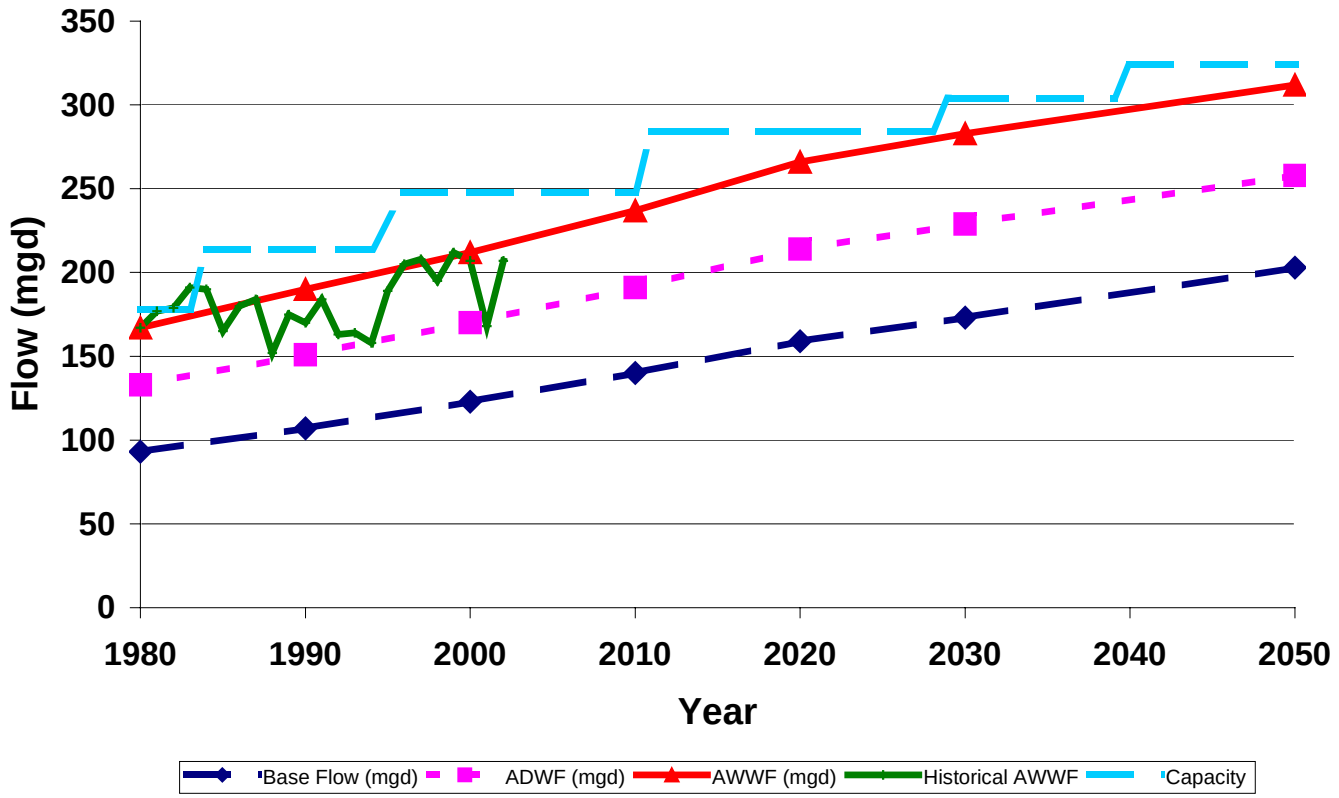


Figure 1 shows the historical AWWF compared to the projected AWWF for the King County System. One observation from the figure is that the measured flow is well below the projected flow for the years 1987-88, 1992-94, and 2000-01. This is because these years are generally described as drought years in the Puget Sound region. In years when the rainfall has been about normal or above normal (1981–82, 1984, 1986–87, 1997, and 1991), the measured AWWF at the treatment plants is very close to the projected AWWF. Figure 1 also shows that in 2013 the projected AWWF will reach the system capacity of 248 mgd. In terms of the individual treatment plants, the West Point Treatment Plant will have some capacity beyond 2010, and the South Treatment Plant may reach capacity before 2010, as shown in Figures 2 and 3, respectively.

Figure 2
West Point Projected and Actual
Average Wet-Weather Flows and Capacity

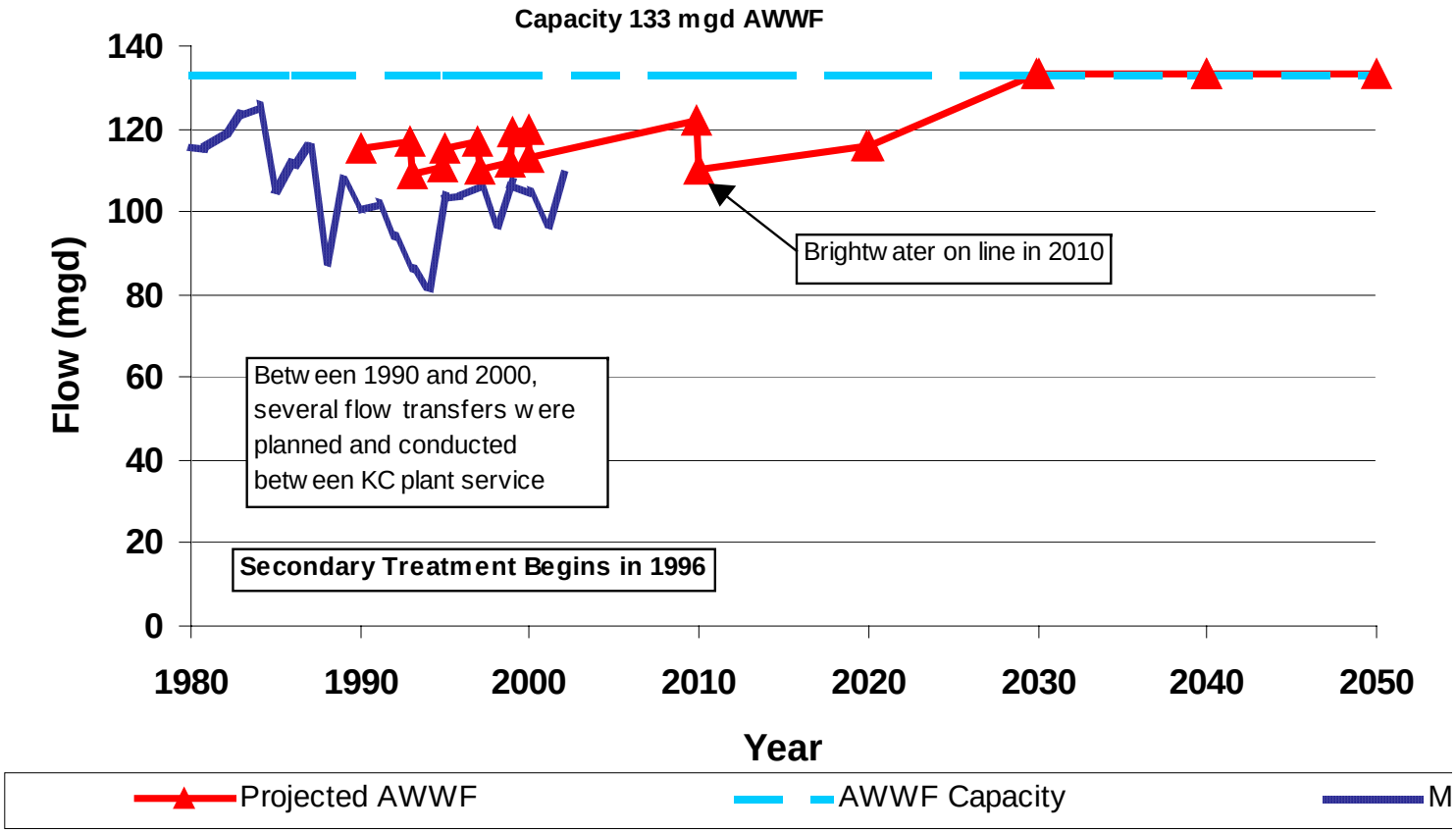


Figure 2 shows that while West Point does have additional capacity beyond 2010, there is insufficient conveyance capacity to get the flows to West Point because of limitations in the Kenmore Interceptor, as well as insufficient digester capacity to handle the additional solids.

Figure 3
South Plant Projected and Actual
Average Wet-Weather Flows and Capacity

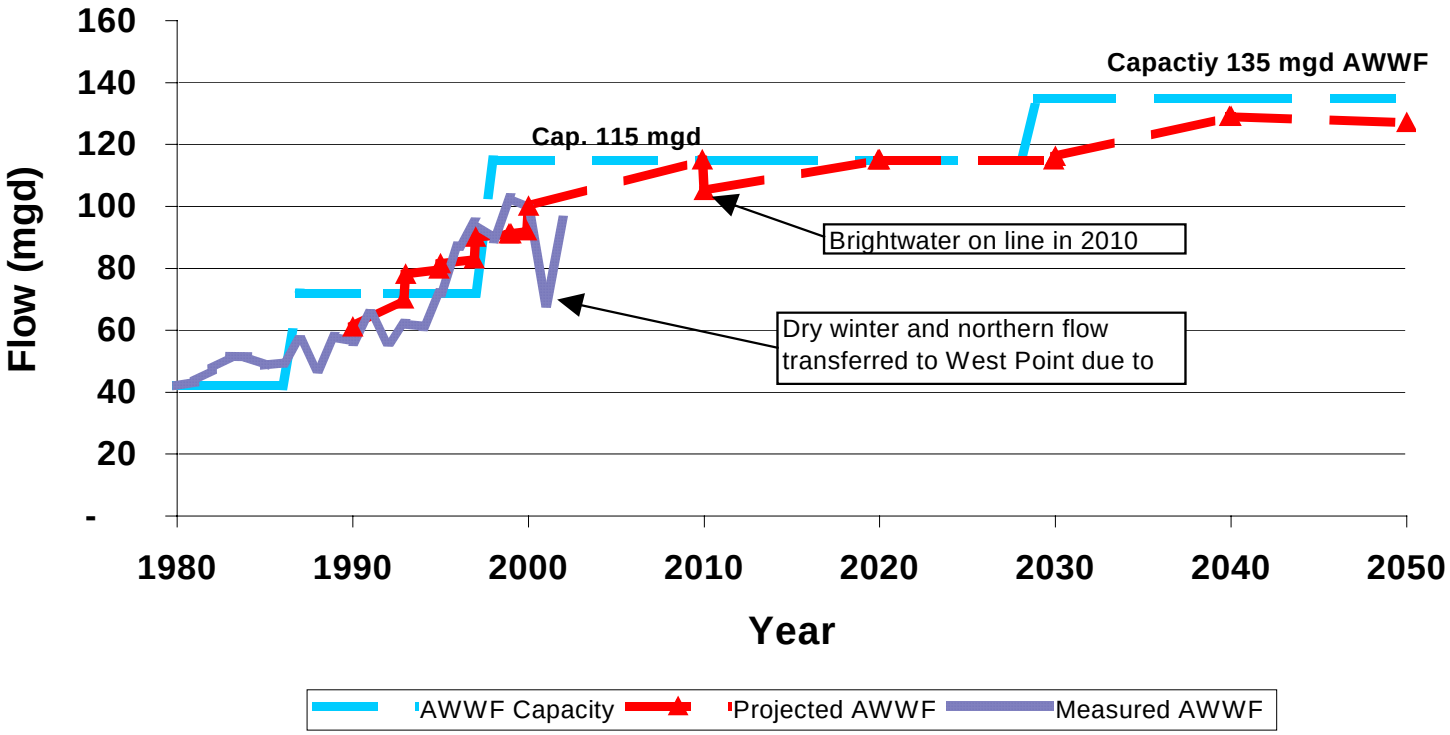


Figure 3 shows that the measured AWWF at the South Treatment Plant has increased rapidly during the 1990s toward the plant's capacity of 115 mgd in 2010. And apart from a dry year and flow transfers in 2001, the measured flows were on track to reach the plant's capacity even sooner.

Methodology for Peak Flow

Peak flows were projected starting with 1990 as the base year using King County's hydrologic and hydraulic routing models. The models use various inputs in addition to base sanitary flow estimates and sewered area estimates, and the model was calibrated for 12 sub-areas making up the entire service area. The model simulates flow, including I/I, during dry weather and storm events. Forty-three years of rainfall data was also run through the model to estimate 20-year peak flow in each sub-basin. Future peak flows are projected using population, sewered area, existing I/I responses, and a degradation factor for increases in I/I.

The north service area continues to be a major constriction in the system. Based on model results done in 1998, King County estimates that the Kenmore Interceptor (a.k.a. Lake Line) and upstream storage and flow transfers to Edmonds will reach capacity no later than 2010. This assumption is supported by recent checks against the model, comparing our 1998 modeled peak flows for basins discharging to the Lake Line for the year 2000 against updated flows modeled using actual rainfall data from the 2001–2002 wet season. The results shown in Table 2 confirm that our original estimates are still valid.

Table 2
Comparison of Previous and Current Flow Estimates to the Kenmore Interceptor

Basin	Original Year 2000 20-year Peak (mgd)[a]	Updated Year 2000 20-year Peak (mgd)[b]
Swamp Creek - Snohomish County	9.6	7.1
Swamp Creek - King County	1.7	1.7
Kenmore Section 5 plus Bothell	5.8	8.8
Inglewood	2.6	3.6
Lake Forest Park - Snohomish & King Co.	5.4	5.4
Lyon Creek - Snohomish Co.	0.7	1.7d
McAleer & Lyon	6.2	6.2
Lake Ballinger Pump Station	16	14
Total	**48**	**48.5**

[a] Modeled flow in 1998 [b] Modeled flow using measured rainfall from the 2001–2002 wet season

Methodology for Solids Loading

Estimates for solids are developed by applying unit loading factors to the population and employment forecasts. Biological oxygen demand and total suspended solids are measured daily so there is regular data to be used to estimate future solids loading. Actual solids volumes that leave the plants as biosolids are also measured and used to "back calculate" in-plant facility needs.

Solids handling is also a critical factor in determining the timing for new treatment plant facilities. Current projections show that the South Plant will reach its solids handling capacity at 2010 and West Point is already at or near its solids capacity. During the RWSP, we expected West Point to have enough solids capacity to last through 2030 and match its hydraulic capacity at 133 mgd AWWF. Problems with the digester and solids handling facilities are leading us to believe that we have matched the capacity now. Evaluations are being done now to determine if minor modifications will enable the capacity to last through 2010 when Brightwater is online.

Summary

All indicators used to project conveyance and treatment plant capacity indicate that King County is running out of capacity.

- King County will exceed capacity in the north end conveyance and storage no later than 2010.
- King County may be out of capacity at the South Plant sooner than 2010.
- King County are already at the limit of capacity in solids handling for West Point.

In late 1999, the King County Council adopted a plan to build a new treatment plant in the north end by 2010. This decision occurred after lengthy debate over whether to maximize the existing two-plant system by expanding the West Point and South Treatment Plants in 2010. The consequences of delaying new capacity or downsizing our facilities based on uncertain projections or inadequate temporary facilities are unacceptable for public health, the environment, and the economy. Replacing or delaying new facilities by constructing interim storage facilities or alternative technologies for solids have very short-term benefits compared to their costs.

As the No Action Alternative of the Draft EIS currently stands, it does not include what the City believes to be the most current forecasts for population growth and water use. We request that the No Action Alternative be revised to include those forecasts. This would require that the range of alternative and impacts be analyzed under the Draft EIS. Because project timing and phasing would be notably different with the new information, the environmental impacts of constructing the project by 2010 would result in unnecessary environmental impacts well in advance of project need. Furthermore, new technologies and new construction techniques with lesser environmental impacts may be available by the time the plant is actually needed.

Later in 2003, King County is scheduled to revise flow projections based on current population forecasts to ensure that its wastewater facilities are properly sized and have sufficient capacity available when needed to meet the demands of growth. However, the planned revision to flow projections would occur too late to inform this environmental review process. Sufficient information is available now on projected per capita and per employee water use and population forecasts to support an updated forecast prior to completion of a final environmental determination.

A modified No Action Alternative should be developed, evaluated and spelled out more fully in the Draft EIS. This new No Action Alternative could include significant delay of new treatment plant capacity, increase of in-line storage to address conveyance capacity needs, evaluation of alternative solids handling strategies, and other sound and economical strategies as deemed reasonable by wastewater engineers. C10-1

Attached you will find a detailed memorandum that documents our findings. We are available to meet with you to discuss them at your convenience.

Thank you.

Sincerely,

Chuck Clarke, Director
Seattle Public Utilities

Detailed Comments on the Forecast of Base Flow in the
Draft Environmental Impact Statement (EIS)
Brightwater Treatment System
January 21, 2003

C10-2 In the Draft EIS, treatment plant capacity is designed to meet average wet weather flows. This flow is equal to base flow plus average peak season Inflow and Infiltration (I/I). Current I/I has been estimated to grow at 7% per decade through 2030 due to deteriorating pipes and leaky joints from new connections. After 2030, I/I is assumed constant. This seems reasonable since we would expect that I/I from new development would be less leaky than existing development I/I. What that means though is that most of the projected growth in wet weather flows is not expected to come from growth in I/I. Figure 2-3 in the Draft EIS shows about 90 mgd of average wet season I/I in 2000 growing to about 110 mgd by 2030. That's only an increment of 20 mgd which then does not increase beyond 2030.

So what's driving the increase in projected total peak flow and the perceived need for additional treatment capacity? It's the forecast of base flows used in the Draft EIS. Figure 2-3 shows base flows increasing from 105 mgd in 1990 to 175 mgd in 2030 and to 200 mgd by 2050. This is quite at variance with the City of Seattle's expectations of growth in water demand, which should closely correspond to baseflow projections. Whereas the Draft EIS is projecting 67% growth in base flows between 1990 and 2030, SPU expects water consumption in its service area[1] to increase by less than 10% in the same period. Why such a difference?

One reason is the population forecast used to project base flows. The forecast used in the Draft EIS[2] has population in the wastewater service area increasing 72% between 1990 and 2030. However, the latest PSRC forecasts show population in the service area growing less than 50% in the same period.

Secondly, the flow factors per employee utilized in the Draft EIS to estimate non-residential base flows appear to be higher than current levels. Using non-residential sewer flows in Seattle and non-residential winter water consumption[3] in 's wholesale service area, the City estimates base flow factors per employee about 20% less than those used in the Draft EIS.

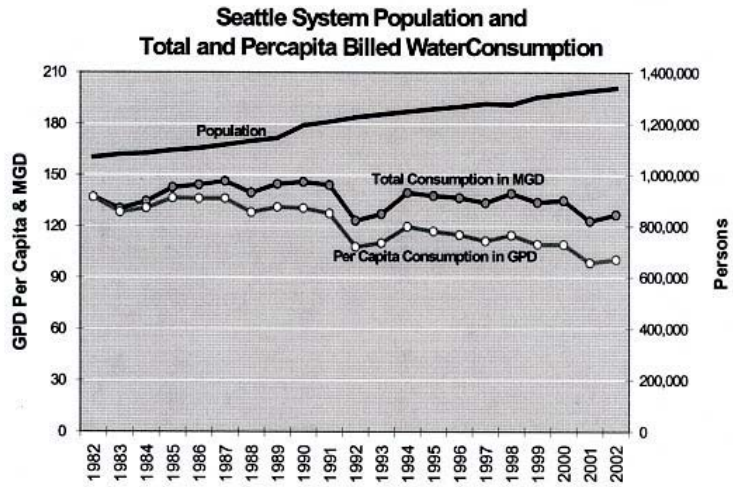
Most importantly, the primary reason for the difference in base flow estimates is water conservation. The Draft EIS does not appear to factor in the impact of water conservation on its projections. In all its analysis, the Draft EIS assumes that base flows will grow proportionally with demographic variables. That is, the amount of residential wastewater generated per person and the amount of non-residential wastewater generated per employee is assumed to remain constant over time. However all of our experience on

[1] Note that 85% of King County's wastewater customers are located in the City's service area.
[2] Table 3, page 1-21 in the 1997 WRSP Draft Plan
[3] Winter water consumption may overstate actual sewer flows.

Response to Comment C10-2

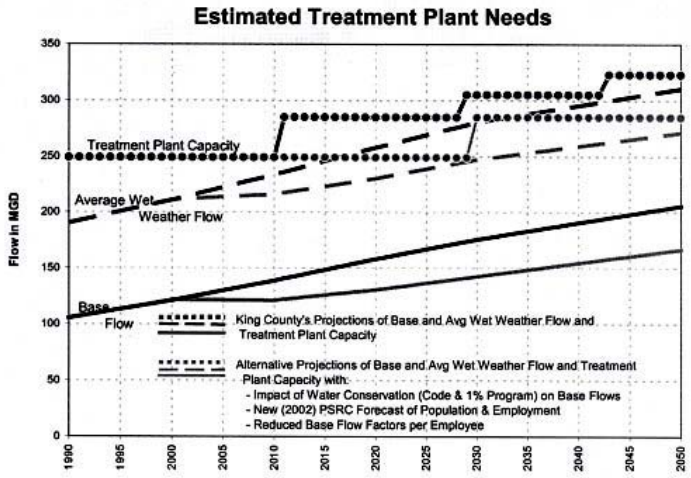
Please refer to the response to Comment C10-1 in this letter.

the water side tells us this isn't the case. Between 1990 and 2000, population in the City's service area grew by 10% but billed water consumption declined by 8%, resulting in a 17% drop in per capita consumption. Population is forecast to grow another 7% by 2010 yet billed water consumption is projected to shrink another 4%. Consumption is dropping because conservation has and will continue to more than offset the impact of population growth on water demand.



The graph of Estimated Treatment Plant Needs from Figure 2-3 of the Draft EIS is recreated below. To this graph has been added an alternative projection of base and wet weather flows reflecting the 2002 PSRC forecast of population and employment, revised non-residential base flow factors, and a conservative estimate of future water demand reductions due to conservation. The resulting projected wet weather flows are such that additional treatment capacity is needed by about 2030. The specific assumptions behind the alternative projection follow.

C10-2



Inflow and Infiltration. No change from EIS. Beginning at 85 mgd in 1990, I/I is assumed to increase 7% per decade through 2030.

Population and Employment Forecasts. The PSRC 2002 forecasts of population and employment for the Forecast Analysis Zones (FAZs) listed below were aggregated to produce forecasts for the wastewater service area.

3110	3120	3130	3414	3415	3416	3426	3427	3505	3600
3816	3825	3900	3905	4005	4110	4120	4130	4210	4225
4226	4400	4505	4506	4605	4606	4810	4820	4900	5010
5020	5100	5205	5305	5306	5415	5425	5515	5525	5535
5546	5600	5715	5716	5720	5815	5825	5826	5915	5916
5925	6010	6020	6113	6114	6115	6123	6124	6125	6126
6213	6214	6215	6216	6223	6224	6225	6226	6316	6325
6326	6410	6420	7315	7316	7320	7335	7340	7415	7535

C10-2

Comparison of Demographic Forecasts – Draft EIS and 2002 PSRC

	Population			Non-Industrial Employment		Industrial Employment	
	King County	1994 PSRC	2002 PSRC	King County	2002 PSRC	King County	2002 PSRC
1990	1,132,102	1,267,153	1,267,153	704,193	711,678	169,350	166,585
2000	1,309,176	1,417,682	1,445,771	874,778	947,126	152,599	140,089
2010	1,510,322	1,566,120	1,571,352	1,050,430	1,100,613	147,719	129,624
2020	1,768,571	1,749,489	1,731,443	1,177,363	1,255,913	139,949	126,277
2030	1,944,502	1,932,858	1,886,711	1,396,092	1,400,856	132,724	125,673
% Change 1990-2030	72%	53%	49%	98%	97%	-22%	-25%

As the comparison above shows, the forecasts of employment used in the Draft EIS are quite close to the new PSRC forecast. However, population in the draft EIS forecast increases by 72% over 40 years compared to 49% in the 2002 PSRC forecast. The reason is *not* that PSRC has changed its forecast radically since 1994. Rather, the Draft EIS forecast of service area population used to project base flows departs from the 1994 PSRC forecast. The difference is that the early year population figures used in the Draft EIS are lower than the 1994 PSRC forecast for the service area by as much as 135,000. This implies a much higher rate of population growth from the lower base and results in a steeper projection of base flows.

Base Flow Factors. The Draft EIS applies the following base flow factors to the forecast of population and employment to project base flows:

Residential: 60 gallons per day (gpd) per person
Commercial: 35 gpd per employee
Industrial: 75 gpd per employee

The 60 gpd per capita for residential sewer base flows is quite consistent with residential sewer/winter water use in the City service area. However, average non-residential sewer volumes per employee, *including industrial*, were found to be 35 gpd in Seattle and 30 gpd outside Seattle – averaging 33 gpd overall. Taking into account the proportion of industrial and non-industrial employees, this would be equivalent to flow factors of 30 and 50 gpd per employee for commercial and industrial, respectively. Therefore, the flow factors used in the alternative projection are:

Residential: 60 gpd per person
Commercial: 30 gpd per employee
Industrial: 50 gpd per employee

Conservation Impacts. Rising water rates, a shift towards rate structures that encourage conservation (seasonal and inclined block), the 1993 state plumbing code, and a wide array of conservation programs combined to reduce per capita water consumption by

C10-2

17% from 1990 to 2000. The forces that combined to achieve so much conservation during the 1990's will continue to operate through the next decade and beyond.

The most certain is the plumbing code which has its effect in all new construction and every time an old showerhead, faucet, or toilet is replaced with a new one. Through its 1% Conservation Program, the City has committed to reducing per capita water consumption in its service area by 10% between 2000 and 2010 (and as of early 2003 is far ahead of schedule). Seattle is also planning additional conservation investment beyond the 1% Program in its retail service area. Many Seattle wholesale customers are pursuing their own conservation programs in addition to participating in the 1% Program. Other water utilities in the central Puget Sound region are getting serious about conservation as they face environmental issues related to the use of their existing supply resources and very limited prospects of obtaining new sources of supply. In its 2001 Regional Water Supply Outlook, the Central Puget Sound Water Suppliers' Forum estimated that conservation measures *already* planned by utilities in King, Pierce, and Snohomish Counties will reduce demand in 2020 by 9% below what it would be with just the plumbing code in place. Another future source of conservation is likely to be new Federal water and energy efficiency standards for washing machines. All of the above could easily offset the impacts of population and economic growth on water demand for decades.

For the purpose of creating an alternative base flow projection, very conservative assumptions about conservation savings were made. Only the expected impacts of the state plumbing code and Seattle's 1% Program were taken into account. In the 2001 Regional Water Supply Outlook, it was estimated that by 2020, the plumbing code will have reduced residential water demand by 11% and non-residential demand by 14%. These percents are used to reduce the base flow factors. It is also assumed that the 1% Program accelerates conservation savings in 85% of the service area but that by 2020 those savings would have occurred anyway with just the plumbing code. The flow factors used in the alternative projection of base flows are as follows:

	Residential gpm per capita	Non-Industrial gpm per employee	Industrial gpm per employee
2000	60.0	30.0	50.0
2010	54.5	27.1	45.2
2020	53.4	25.8	43.0
2030	53.4	25.8	43.0

C10-2 Taking into account other utilities' planned conservation, other cost-effective conservation beyond what is already planned, or the expected federal washing machine efficiency standards would further reduce these flow factors and flatten the projections of base flows.

City of Seattle
Gregory J. Nickels, Mayor

Seattle Public Utilities
Chuck Clarke, Director

February 6, 2003

Pam Bissonnette, Director
Department of Natural Resources and Parks
201 S Jackson, Suite 700
Seattle, WA 98104

Dear Pam:

I want to thank you and your staff for taking the time to discuss the issues that the City of Seattle raised in our 1/21/03 letter to you concerning the Brightwater DEIS. I found the meeting informative. The issues we discussed included the merits of:

1) continuing to use the Inflow and Infiltration (I&I) estimates as specified in the DEIS;
2) replacing the population estimates in the DEIS with the recently released 2002 PSRC estimates for the King County Wastewater service area;
3) continuing to assume that all households currently on septic systems within the service area will be connected to the regional wastewater system by 2020; and
4) taking into account water conservation savings as described in our technical memo dated 1/21/03.

C10-3 It is also my understanding based on today's conversation that the timing of the Brightwater plant is being driven by the following three constraints rather than on base and average wet weather flows. Those constraints are:

1) Operational constraints at West Point are leading to solids handling reaching capacity in the next few years;
2) Reaching conveyance capacity at the Kenmore Interceptor by 2010; and
3) Reaching capacity at the Renton plant by 2010.

Our analysis assumed that the timing of Brightwater was predicated on base and average wet weather flows being the system constraints. Since you indicated that these are not the constraints that you are basing your timing decision on, it is reasonable to conclude that you may determine an earlier date based on your analysis. It is also reasonable to conclude that if the timing decision is based on the three constraints identified above, then the No Action Alternative need not consider alternative actions. The City of Seattle remains committed to the current siting process and your timelines to complete that work. We look forward to continuing to work with King County on the implementation of the Regional Wastewater Services Plan.

Sincerely,

Chuck Clarke, Director
Seattle Public Utilities

Key Tower Building, 700 5th Avenue, Suite 4900, Seattle, WA 98104-5004
Tel: (206) 684-5851, TTY/TDD: (206) 233-7241, Fax: (206) 684-4631, Internet Address: http//www.seattle.gov/util/
An equal employment opportunity, affirmative action employer. Accommodations for people with disabilities provided upon request.

Response to Comment C10-3

Please refer to the response to Comment C10-1 in this letter.

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C6
CITY OF SHORELINE

FINAL
ENVIRONMENTAL
IMPACT STATEMENT

Brightwater
Regional Wastewater
Treatment System

COMMENTS AND RESPONSES

CITY OF SHORELINE

City of Shoreline
17544 Midvale Avenue North
Shoreline, WA 98133-4921
(206) 546-1700 ♦ Fax (206) 546-2200

January 17, 2003

RECEIVED
JAN 21 2003
ENVIRONMENTAL PLANNING DIVISION

Attn: SEPA Responsible Official
Environmental Planning
KSC-NR-0505
King County Wastewater Treatment Division
201 Jackson Street
Seattle, WA 98104-3588

Dear SEPA Responsible Official:

C6-1

The City of Shoreline has reviewed the Brightwater DEIS and would like to commend King County on this document as well as the review process to date. The quality of the analysis and the expertise of the staff are apparent. We would also like to thank King County Staff for participating in our local Brightwater meeting on December 17th. The City appreciates Executive Sims' decision not to locate the treatment plant at Point Wells. We do however have many questions and concerns regarding the proposed construction and operation of portions of the conveyance system and possibly the outfall within Shoreline.

The City's detailed response to the DEIS is located in Attachment A. Our comments are focused on the conveyance system and outfall sections of the DEIS since the treatment plant is proposed for location in Edmonds or Woodinville. Our responses are organized by chapter of the DEIS plus an additional category labeled "General". The comments by chapter are further organized by the identification of "errors and inconsistencies", impacts that need to be addressed, and recommended mitigation measures.

Thank you for the opportunity to comment on the Brightwater DEIS. If you have any questions about the issues expressed in this letter, please contact Rachael Markle, Planning Manager, at (206) 546-6778.

Sincerely,

Steven C. Burkett
Shoreline City Manager

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Response to Comment C6-1

Thank you for your comment.

Attachment A

GENERAL

C6-2

1. **Issue or Impact to be addressed:** Based on site analysis and overwhelming public comment, the location and construction of Portal #22 would have devastating impacts on our residents and surrounding neighborhoods. The City requests that Portal #22 not be constructed.

C6-3

2. **Issue or Impact to be addressed:** The DEIS is, general in nature, and consequently difficult to comment on in regard to specific impacts. For example, while Chapter 16 identifies specific construction corridors, Chapter 3 states that the pipeline (tunnel) alignment corridors represent a 1,000-foot wide path. Additionally, portal locations are referenced by intersection, and would generally be two acres in size. However, per Chapter 3, the final 2-acre site could vary in size (up to 4 acres for Portal 19) and would be located somewhere within a larger undefined 72-acre circle, the center of which is the approximate street intersection(s) noted. This means the actual portal location for a 2-acre site could be approximately 0.2 miles (±) from the referenced intersection.

C6-4

3. **Issue or Impact to be addressed:** The Preferred Alternative Route 9 – 195th Street System has the most impacts on the City of Shoreline of the three alternatives studied in the DEIS. The Unocal System, which minimizes the number of portals required throughout the project area and locates the outfall in Edmonds instead of Shoreline, appears to have the least impacts on Shoreline. The location of portals as identified in the DEIS in the City of Shoreline is complicated by the presence of critical areas and densely populated neighborhoods. Both the Route 9 – 228th System Alternative and the Unocal System Alternative limit the impacts on Shoreline's natural environment, residents and business owners/operators. In addition, there is limited and restrained surface access to Portal 19 and potential Outfall Zone 7S. The City is still concerned about the environment, residents and business owners located in the vicinity of portals 5 and 7, which are needed to construct the Unocal System. However, there do appear to be locations within these portals that can avoid critical areas and populated neighborhoods i.e. the King County Maintenance Yard on 25th Avenue NE north of Ballinger Way or portions of the Aldercrest School site.

C6-5

3. **Issue or Impact to be addressed:** The distribution and use of mitigation funds in impacted communities should be proportional, targeted, and flexible to respond to the wide-range of complex impacts that cannot be fully mitigated in the short-term or completely unforeseen.

C6-6

Recommended mitigation measures:

a. We ask that King County give the highest level of consideration in minimizing impacts to the City, our residents, and our businesses and in providing relocation assistance to parties displaced by the acquisition of properties for facilities, or otherwise temporarily or permanently impacted by this project. Impacts to

1

Response to Comment C6-2

Portal 22 has now been identified as a secondary portal. Please refer to Chapter 3 of the Final EIS for an updated project description.

Response to Comment C6-3

Updated conveyance and portal information is available in Chapter 3 of the Final EIS.

Response to Comment C6-4

King County recognizes that impacts to critical areas and populated areas are a concern for all communities. These concerns have been included in the candidate portal screening process for each portal siting area. The process is described in the Final EIS, Appendices 2-B, Portal Screening Level 1 and 2 Documentation, and 2-C, Portal 19 Screening Level 3 Documentation. The candidate portal sites are included in Chapter 3 of the Final EIS.

Response to Comment C6-5

SEPA requires a discussion of measures to mitigate significant adverse environmental impacts identified in the EIS. In the Final EIS, King County has identified proposed and potential mitigation measures. Once a final decision is made on the location for the Brightwater System, King County will work directly with affected jurisdictions and permitting agencies on mitigation strategies and solutions to Brightwater construction and operational impacts.

Ordinance 13680, adopting the Regional Wastewater Services Plan, establishes environmental mitigation policies to guide King County in working with communities to develop mitigation measures for environmental impacts from the construction and operation of wastewater facilities. This ordinance is available on King County's Web site at http://dnr.metrokc.gov/WTD/rwsp/documents/13680.pdf.

Response to Comment C6-6

The Draft EIS identified, for each element of the environment evaluated, reasonable mitigation measures. In response to comments, such as this comment calling for additional specificity, the Final EIS provides additional detail in the discussion of a wide range of reasonable mitigation measures. Under SEPA, the required level of mitigation measures detail is described in WAC 197-11-440(6)(c)(iv). King County will follow applicable federal and state laws and King County policies and procedures for acquiring property for the project. These provisions specify that King County provide just compensation based on fair market value for property purchase and easement acquisition, as well as relocation assistance where eligibility is established. Please refer to the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 and the King County Property Acquisition and Relocation Web site at http://dnr.metrokc.gov/wtd/row/acquisition.htm for more information. Some aspects of the mitigation suggested by this comment may constitute an unlawful gift of public funds depending on the particular circumstances.

residences and businesses should be recognized and compensated in three categories:

1. Those properties that will be taken for the purposes of constructing and maintaining the portal (mitigation: properties will be purchased by King County at a fair and competitive rate and owners will be provide with relocation assistance – moving costs, etc.);
2. Those properties that will not be taken, but will be severely impacted (mitigation: temporary relocation assistance during construction, financial compensation) ; and
3. Those properties that may suffer some impact or that require easements to the County (mitigation: negotiate on a case by case basis).

C6-6

C6-7

b. We ask that a mitigation fund be established for Shoreline and that a proportional share of mitigation dollars be placed in this fund based on the short-term and long-term impacts to the City from Brightwater. Shoreline must have flexibility to spend mitigation payments based on our priorities for addressing project impacts that threaten the quality of life in our City.
c. King County should establish and operate a long term monitoring program to assess the impacts of construction and operation of the Brightwater system on surface water, groundwater, marine waters, plants, animals, and wetlands, air and environmental health.
d. A free mediation process should be provided to jurisdictions, residents, and businesses that feel they have not been adequately compensated.
e. The project should include a substantial communications component to ensure that timely, useful, and accurate information about the project is made available to Shoreline citizens and businesses. The City should be directly involved in developing and implementing a communications strategy that matches the needs and conditions in our community. Environmental education should be an important part of this communications strategy.
f. Shoreline, our citizens, and our business owners should be consulted regarding expenditures under the King County 1% for Arts Program. Public art opportunities at areas identified as future *gateways* by the City of Shoreline, including the intersection of SR 104 and 205th Ave. NE, should be given priority and should be coordinated with City Gateway plans. Shoreline should receive an amount proportionate to the construction dollars expended in Shoreline.

4. **Issue or Impact to be addressed:** The acquisition of private and public property for portal sites would cause a wide range of impacts to the City, its residents, and businesses that must be addressed.

Recommended mitigation measures:

a. Large landscaped "Good Neighbor" buffers should be included around all above-ground facilities and maintenance access points.
b. Pump station and portal sites and portions of all facility sites that are not needed following system construction should be improved for public use based on specific input from the impacted community. At a minimum, these sites should

2

Response to Comment C6-7

Please refer to the response to Comment C6-5 in this letter for information on mitigation suggestions, plans, and policies.

Monitoring programs during construction and operation are discussed throughout the Final EIS. Surface water, groundwater, and marine water monitoring programs are detailed in Chapter 6, plants, animals, and wetlands are in Chapter 7, air is in Chapter 5, and environmental health programs are in Chapter 9. These monitoring programs will be developed in compliance with all applicable federal, state, and local requirements, and will be defined in the permitting process.

Public involvement has been, and continues to be, an important part of the project. King County will continue to consult with local residents and jurisdictions throughout the construction and operation of the Brightwater Treatment Plant. King County appreciates support of an educational facility at the treatment plant and is considering such a facility as part of a mitigation plan.

The 1 Percent for Arts program is not a SEPA-related issue and therefore is not addressed in the Final EIS. The King County Cultural Development Authority's Public Art Program, formerly the King County Public Art Program, manages the One Percent for Arts fund for King County. Please refer to King County Code Chapter 4.40, for more information on King County's public art fund.

King County's goal is to construct regional wastewater facilities that enhance the quality of life in the region and in the local community and are not detrimental to the quality of life in their vicinity. More information on aesthetic mitigation at the treatment plant sites and along the conveyance routes is detailed in Chapter 12 of the Final EIS, specifically the Affected Environment section.

C6-7 be turned over to the jurisdiction in which they are located and reused as determined appropriate by the jurisdiction and its citizens.

C6-8 c. The City of Shoreline should be consulted regarding access and maintenance easements needed by the City on properties acquired by King County for Brightwater facility construction and operation. Easements should be granted free of charge and without unnecessary delay.

C6-9 d. Suggest locating Portal 7 at the existing King County Maintenance Yard on 25th NE north of Ballinger Way or explore the feasibility of constructing the portal on a portion of the Aldercrest School site for the purposes of preserving homes and businesses. After construction of the portal is complete, these mitigation measures are recommended:

1. Enhance the existing degraded vegetation areas in Bruggers Bog and remove invasive species.
2. Portions of the King County Maintenance Yard that are not needed for continued portal maintenance should be restored to historical wetland conditions associated with the adjacent Bruggers Bog to the north.
3. Following restoration, this property should be considered for transfer to the City of Shoreline as part of the compensatory mitigation for reuse in a manner determined to be appropriate by Shoreline and its citizens.
4. The transfer to the City of Shoreline would also be contingent upon King County being responsible for the cleanup of any environmental hazards found on site.
5. Improve the athletic fields at the Aldercrest School site.

e. After the construction of Portal 19 is complete, the following mitigation measures are recommended:

1. The property should be considered for transfer to the City of Shoreline for reuse for public beach access and/or nature and wildlife habitat.
2. The transfer to the City of Shoreline would also be contingent upon King County being responsible for the cleanup of any environmental hazards found on site.

C6-10 f. Conveyance facilities, including pump stations, need appropriate odor and noise mitigation for ongoing operations, an emergency power supply, and other contingencies to mitigate system failure potentials.

g. Request that King County give the highest level of consideration in developing site specific mitigation measures to address typical construction impacts related to dust, noise, street closures, outdoor lighting/glare, security measures, transit disruption, and construction traffic in the City of Shoreline. The City, our residents, and business owners should be consulted in depth regarding the timing of construction, traffic detours, temporary bus stops and transit route relocation, and the development of other mitigation measures following the design phase of system development.

3

Response to Comment C6-8

King County has been working with and will continue to work with the City of Shoreline when siting is completed and design work progresses to identify and address project impacts within the City's jurisdiction. Specific property issues will be discussed with the City on a case-by-case basis as they arise.

Response to Comment C6-9

Please refer to the updated information on potential portal locations and related impacts and mitigation measures in Chapters 3 through 17 of the Final EIS, and the response to Comment C6-5, in this letter, regarding mitigation suggestions.

Response to Comment C6-10

Please refer to the updated information on potential portal locations and related impacts and mitigation measures in Chapters 3 through 17 of the Final EIS, and the response to Comment C6-5, in this letter, regarding mitigation suggestions.

CHAPTER 3 DESCRIPTION AND COMPARISON OF ALTERNATIVES

C6-11 1. **Error or Inconsistency Noted:** Table 3-2 (Chapter 3) lists portal depths for both gravity and force main alternatives for all portals located in the City. However, page 3-13 states that the preferred "second option" would have force mains constructed inside the tunnel for 9.6 miles from the Wastewater Treatment Plant to Portal 27, and have a gravity main within the tunnel from Portal 27 to the outfall. This implies the force mains would terminate at an easterly portal location in the City and flow by gravity through the remaining City route. This is inconsistent with Table 3-2.

C6-12 2. **Error or Inconsistency Noted:** Per pages 3-4 (first paragraph 3.2.2), portals would provide *"...tunnel maintenance access points, odor control and/or ventilation facilities, and possibly a new pump station..."*. A pump station was not shown to be located within the City of Shoreline. It is also unclear if either odor control facilities or ventilation systems are proposed within the City of Shoreline. If these are proposed, they should be clearly stated.

C6-13 3. **Issue or Impact to be addressed:** For both effluent pipeline proposals (the 228th and 195th corridor alignments) routed to the Richmond Beach area, references are made to siting of a permanent dechlorination building, approximately 30 feet by 75 feet, located on 0.5 acres. It would have a chlorine monitoring and control system, sodium bisulfide storage, metering system, and mixing box. Presumably, it would also need routine access, security system, fencing, parking, lighting, etc. It is unclear where this facility will be located, but it is likely that it will be located on the Richmond Beach portal site or in an upstream portal site located within the City of Shoreline.

C6-14 **Recommended Mitigation Measures:** It should be subject to further review and approval by the City and subject to further mitigation consideration. Require the dechlorination facility to be located underground if feasible. If it cannot be located underground, the city will require a Special Use Permit be obtained to address siting, aesthetics, safety, lighting, noise etc. and any construction of a dechlorination facility must include appropriate mitigation measures to buffer noise and the extra lighting referred to in the DEIS.

C6-15 4. **Issue or Impact to be addressed:** The siting of dechlorination facility (sites 19,23, & 27) all within or adjacent to City of Shoreline may poise high risk in the event of an accident to residential areas. Sensitivity is needed in siting this facility to zoning and risks posed to public health and safety.

Recommended Mitigation Measures: It is recommended that any dechlorination facilities not be constructed at portal sites that encompass or that are adjacent to streams, wetlands, and/or significant vegetation areas and associated wildlife habitat.

4

Response to Comment C6-11

The text has been refined in the Final EIS to clarify the information. The "force main-gravity" designation in the Draft EIS Table 3-2 was to designate the effluent system alternative with force mains in the tunnel from the Route 9 site to Portal 27 and then gravity flow from Portal 27 to Portal 19.

Please note that with subsequent engineering analysis, the Route 9 force main-gravity effluent system alternative has since been eliminated. The Final EIS describes the gravity-only effluent alternative for the Route 9 195th and 228th Street System Alternatives.

Response to Comment C6-12

The paragraph was intended to list all potential equipment that may be constructed in any of the three conveyance system alternatives. The only new offsite pump station proposed is for the Unocal System Alternative.

The number and location of the odor control and tunnel access facilities had not been determined at the time of the Draft EIS publication. Subsequent engineering work has identified the following facilities that could be located within the City of Shoreline:

- Route 9-195th System Portal 5 - odor control and dechlorination facility
- Route 9-195th System Portal 19 - outfall transition structure
- Route 9-228th System Portal 19 - outfall transition structure
- Unocal System Portal 7 - odor control structure

These facilities are described in Chapter 3 of the Final EIS.

Response to Comment C6-13

As described in Chapter 3 of the Final EIS, the dechlorination facility would be located at Portal 5 in

Shoreline or Mountlake Terrace for the Route 9-195th Street System Alternative and at Portal 26 in Mountlake Terrace for the Route 9-228th Street System Alternative.

Response to Comment C6-14

Mitigation measures for the proposed conveyance system would be coordinated with and agreed upon by both King County and the local jurisdictions, including the City of Shoreline. Since the dechlorination facility would be located in either the City of Kenmore (for the Route 9 - 195th Street system) or Mountlake Terrace (for the Route 9 - 228th Street system), mitigation measures for the construction and operation of the facility, such as siting, noise, safety, lighting, and aesthetics, would be coordinated with those jurisdictions in accordance with permitting authority.

Response to Comment C6-15

King County is aware of the potential for increased risks associated with the construction and operation of any of their facilities and does take these risks and agreed-upon mitigation into consideration during the facility siting process. As such, siting of the dechlorination facility would be coordinated with the either the Cities of Shoreline or Mountlake Terrace (for the Route 9-195th Street System) or Mountlake Terrace (for the Route 9-228th Street System).

5. **Issue or Impact to be addressed:** Section 3.7 addresses construction schedules and construction times. Regarding the construction phase, the conveyance system would take up to six years to complete with activity at each portal site taking two to five years to complete (construction). The outfall conveyance system will take two years to construct. The proposed schedules as stated therein further indicate construction times consisting of five work-day, 12-hour work shifts (7:00 AM to 7:00 PM) and reference possible 24-hour shifts (7 days a week). This may prove particularly unnerving to businesses and residents inconvenienced by these operations, particularly since additional references in the report indicate the sites will require street lane closures (access issues), have intense noise, be dusty, have night lights, and exhaust fumes.

Recommended Mitigation Measures:

a. City Staff would like to take a field trip to a tunnel construction site to experience the noise, dust, fumes and vibrations first hand.
b. If construction noise is audible to nearby residents the construction hours shall be limited per the City's Municipal Code Chapter 9 or appropriate sound barriers or sound baffling devices shall be employed to reduce the noise to a level that is not audible off site.
c. Road or lane closures must be approved by the City of Shoreline Right-of-Way Permit.
c. If construction impacts are received by Shoreline residents or businesses either temporarily or permanently they shall be compensated.

C6-15

6. **Issue or Impact to be addressed:** Table 3-11 states that the treatment plant will adhere to most recent stormwater manual for design and control of storm water runoff. Yet, it does not adopt the same criteria for portal sites during and after construction.

C6-16

Recommended Mitigation Measures: Use the 2001 King County stormwater manual regardless of the activity planned.

C6-17

7. **Error or Inconsistency Noted:** City of Shoreline threshold for drainage review is 1,500 square feet. Table 3-11 should reflect this.

8. **Issue or Impact to be addressed:** Table 3-11 sites minimal impacts from effluent discharge to Puget Sound. However, it fails to calculate a budget of anticipated increased levels of pollutants and how this and other sewer outfalls are contributing to cumulative affect to water quality of Puget Sound. Dilution (diffuser) to pollution is the relied upon buffering agent that appears to minimize adverse impacts. This assessment and proposed mitigation could lead to miscalculations of the anticipated impacts.

C6-18

Proposed Mitigation Measures: Analyze cumulative impacts and develop long term mitigation accordingly.

5

Response to Comment C6-16

As described in Appendices 6-D, Permanent Stormwater Management at the Treatment Plant Sites, and 6-F, Groundwater and Stormwater Management at the Candidate Portal Sites, which discuss proposed stormwater management at treatment plant sites and portals, all stormwater would be guided by the Washington State Department of Ecology's *Stormwater Management Manual for Western Washington* (August 2001). To the extent that any local stormwater requirements are more stringent, King County will consider and discuss those standards with local jurisdictions.

Response to Comment C6-17

Information on drainage review is now provided in Appendix 6-F, Groundwater and Stormwater Management at the Candidate Portal Sites, of the Final EIS.

Response to Comment C6-18

There are no known plans for additional outfalls in the region so the cumulative impacts of Brightwater effluent include existing (or ambient) conditions plus the Brightwater contribution. The *Phase 3 Brightwater Marine Outfall Water Quality Investigation* (Parametrix and Intertox, 2002) does include the existing conditions of Puget Sound (including all point and nonpoint sources of pollution) in the analysis of the potential impact of Brightwater effluent on aquatic life. It was assumed aquatic life could be exposed to effluent constituents anywhere within the Sound (including the effluent plume itself) and along the shoreline. For people, the worst-case scenario for direct exposure (incidental ingestion and skin contact with water and sand) was assumed to be at the shoreline scenario. For fish ingestion, it was assumed that people may ingest fish exposed to outfall constituents in any of the locations. Since the outfall will discharge 1 mile offshore

and the plume retained below 100 feet, it is unlikely that any SCUBA divers would be exposed to the discharge.

To evaluate the potential future impacts of the proposed outfalls, potential impacts under existing conditions were also evaluated. A key finding was that estimated impacts to people and aquatic life are generally the same under both existing and future conditions.

CHAPTER 4 EARTH AND GROUNDWATER

C6-19

1. **Issue or Impact to be addressed:** Potential exists for unearthing contaminated soils at the various portal locations, particularly any portal located on or near the Point Wells site. Contaminated soils, once excavated (temporarily stockpiled), or disturbed, provide potential for contaminants leaching into ground or surface waters, or to come into human contact (fugitive dust, etc). Options for treatment of soils depends on the type, nature, and level of contaminants. However, under certain conditions, onsite treatment is permitted. For example, soil can be stockpiled, covered, aerated, etc. for a long period of time.

   Recommended Mitigation Measure: Timely removal of all contaminated soils prior to disposal shall be required and/or treatment in coordination with appropriate City reviews. Any contaminated soils removed from portal or outfall construction sites shall be covered during transport.

C6-20

2. **Issue or Impact to be addressed:** There are likely impacts that cannot be anticipated until the project details are designed and construction is underway. Prevention of potential erosion, groundwater contamination, and groundwater depletion impacts will be particularly important near Portals 5, 7 and 27.

   Recommended Mitigation Measure: The future project design needs to incorporate ample safeguards to prevent, limit and lastly provide compensatory mitigation for any unavoidable erosion, groundwater contamination, and groundwater depletion impacts.

C6-21

3. **Issue or Impact to be addressed:** The DEIS states that groundwater control may consist of pumping groundwater at volumes ranging from just a few to several thousand gallons per minute. If this were to occur at Portals 5, 7 and 27, it would likely impact nearby stream flows and well water supplies. In addition, disposal of this large a volume of dewatering discharge could result in additional impacts to water quality in nearby streams and wetlands.

   Recommended Mitigation Measure: Any such proposed action shall be closely coordinated with the City of Shoreline and Washington Department of Fish and Wildlife (WDFW)in order to assure that the City's interests are protected in these areas. Research and analysis must be performed to assess the effects of seasonal variation on dewatering and discharge of these waters in local streams and other surface water features. Flow control measures must be constructed prior to the release of water into local surface water features. Downstream flooding of properties in Shoreline is not an acceptable impact. In some cases, the construction of onsite detention facilities may be appropriate to handle excess water created by dewatering. Note: Any water that is turbid or otherwise contaminated shall not be released into surface or groundwater. This water shall be disposed of in the sanitary sewer system

6

Response to Comment C6-19

King County is in agreement with the City of Shoreline on management of contaminated soils. Contaminated soil will be handled separately from other excavated soil, with either treatment or offsite disposal in accordance with applicable regulations.

Response to Comment C6-20

As pointed out, not every impact can be anticipated for large complex projects. However, the specific issues of erosion, groundwater contamination, and groundwater depletion will be dealt with in the design phase for the portals listed, and it is King County's goal to prevent any significant adverse impacts associated with these specific elements. Please refer to the response to the Washington State Department of Ecology, Comment W5-9, for additional details regarding assessment of the groundwater issues.

Response to Comment C6-21

Significant additional subsurface explorations and numerical hydrogeology analyses have been conducted as part of this Final EIS related to the conveyance, portals, and treatment plant sites and their potential impacts, if any, to the groundwater regime. Please refer to the responses to the Washington State Department of Ecology, Comments W5-9 and W5-43, for summaries of the subsurface data gathering, numerical analyses, and effect evaluations. Appendices 4-A, Geotechnical Data Report for Proposed Route 9 Treatment Plant Site, and 4-B, Geotechnical Progress Report: Conveyance, of the Final EIS includes geotechnical data gathered for the Route 9 treatment plant site and 195th Street conveyance route, respectively; Appendix 6-B, Geology and Groundwater, provides details on the hydrogeologic analyses.

C6-22

4. **Issue or Impact to be addressed:** The section on vibration and settlement describes various ways to lessen impacts, but does not address the worst case scenario – complete failure of an adjacent structure, a description of how long occupants of an adjacent structure might have to endure the vibration, or when the mitigation techniques are applied.

Recommended Mitigation Measure: Develop a tiered compensation plan to mitigate permanent and temporary impacts to residents and businesses.

C6-23

5. **Issue or Impact to be addressed:** The proposed conveyance system and related facilities along the county line would necessitate construction in geologic hazard areas in the City of Shoreline.

Recommended Mitigation Measure: Mitigation of potential seismic hazards in Portals 5 and 7 are not discussed. This could be important due to liquefaction potential near Lyon Creek and McAleer Creek. Impacts to geologic hazard areas must be fully considered and mitigated on-site to the greatest extent practicable to ensure the project does not increase the risk of impacts to human safety, damage to property, or the environment.

CHAPTER 5 AIR

C6-24

1. **Issue or Impact to be addressed:** No modeling was performed or meteorological data collected in regards to air quality along the conveyance route and outfall zones. The DEIS states that there could be temporary air impacts caused by paint and other fumes during construction. In addition, in the worst case scenario, odors may be released at tunnel ventilation facilities and portal locations. The DEIS makes note of such mitigation as installing odor control equipment along the corridor.

Recommended Mitigation Measure: Odors should be monitored and a response plan developed. Funds should be set aside to address odor issues in the future, especially if the portal is located close to residential or commercial property. In addition, portal ventilation systems need to be designed to direct the air flow away from developed areas.

C6-25

CHAPTER 6 SURFACE WATER

1. **Issue or Impact to be addressed:** During tunnel construction ground water interception will undoubtedly occur. The method for handling this water has not yet been identified. The act of dewatering and the method of disposal could have significant impacts on streams, wetlands, lakes and associated plants and animals. (Note: In Appendix C ESA Essential Fish Habitat Evaluation this impact is not identified.) The 'what to do with the water' is left unanswered as regulations prohibit the magnitude of the discharge to sewer systems and is greater than any

7

Response to Comment C6-22

Vibration mitigation for construction activities and facilities operation has been expanded and discussed in greater detail in Chapter 10 of the Final EIS. Appendices 10-A, Noise and Vibration: Treatment Plant, and 10-B, Noise and Vibration: Conveyance, address the potential duration of construction activities. Maximum durations for treatment plant construction and for conveyance construction are defined in Appendix 3-G, Construction Approach and Schedule, of the Final EIS. Mitigation of noise and vibration would be applied in the facilities design phase and at the beginning of construction. No compensable permanent noise and vibration impacts would be expected to result from Brightwater facilities, since levels would be mitigated to code requirements. Temporary noise and vibration impacts due to construction would be mitigated by practical means, as described in Appendices 10-A and 10-B of the Final EIS. Construction noise is exempt during daytime hours, as defined by each jurisdiction's codes. Non-exempt construction noise would be mitigated to code requirements, if construction outside of exempt times is permitted, or if a variance is secured by the construction contractor.

Response to Comment C6-23

Mitigation of potential seismic hazards at Portals 5 and 7 is now discussed in Chapter 4 of the Final EIS.

Response to Comment C6-24

Odor and corrosion control are discussed in Chapter 5, and in Appendix 5-B, Odor Analysis: Conveyance, of the Final EIS. As standards are being met at the stack and dispersion is not being relied upon, dispersion modeling will not be performed. All odor control equipment will be sized based upon peak air flow rates and peak H_2S concentrations.

King County conducted a H_2S monitoring program in the summer of 2003 to assess dissolved sulfide and H_2S concentrations within the existing tributary flow streams.

Dissolved sulfide and H_2S levels are highest during the summer and will provide worst-case scenario data in order to conservatively design the proposed odor control facilities.

The volume of air outgassing from the underground structures is relatively small, because the size of the conveyance pipes is large relative to the rate of change of the peak wastewater flow rate.

Response to Comment C6-25

Based on more detailed hydrogeologic analyses since the publication of the Draft EIS, dewatering discharge rates have been recalculated and reduced. The dewatering discharge rate for Portal 7 has been changed from 6.7 cfs to a range of 0.002 to 0.25 cfs, with a possible 2-week peak of 0.56 cfs. Please refer to Appendix 6-F, Groundwater and Stormwater Management at the Candidate Portal Sites, of the Final EIS for revised dewatering discharge rates by portal and proposed dewatering discharge disposal options. Please refer to the response to the City of Kenmore, Comment C3-88, for a discussion of alternative dewatering discharge disposal options and Ecology's 10 percent guideline for additional flows to a stream.

preexisting stream flows. No substantial assessment of water quality is given. Some of the City's groundwater is high in sulfur and other dissolved metals and arsenic.

a. The dewatering volume at Portal 7 may be as high as 6.7 cubic feet per second, exceeding the average annual discharge for nearby Lyon Creek, the presumed receiving watercourse. Potential impacts identified in the DEIS include localized flooding and stream channel erosion of Lyon Creek and its tributary (see Table 6-5). The DEIS is unacceptably vague regarding how this potential impact to the Lyon Creek system will be avoided or effectively mitigated, saying at the bottom of page 6-35 that "This will likely require management approaches to minimize potential stream scour." Those management approaches are not yet identified. C6-25

b. Dewatering at Portal 3 to McAleer Creek could have significant impacts. Table 6-5 describes flooding and erosion impacts to McAleer Creek due to Portal 3 construction; however, Figure 6-3 shows Portal 3 to be outside of the McAleer Creek drainage basin. Although Portal 3 is outside the City of Shoreline, if the comment in Table 6-5 is correct, the City has a vested interest in the overall health of the creek and its fish populations.

c. Much of the McAleer Creek basin is within the City and fish migrating upstream from Lake Washington and beyond must pass through the lower stream reaches to stream sections in the City. As with Lyon Creek at Portal 7, potential impacts to McAleer Creek from discharge of collected dewatering water are not mentioned in the DEIS and mitigation measures are also not adequately described. C6-26

d. This impact is left in such a gray state that adequate mitigation is impossible to determine. This part of the project needs to be rethought as to potential scenarios and outcomes. Primary areas of concern are for portals 7 and 27. Mitigation for proposed work in the Portal 7 should include enhancement of existing degraded vegetation areas in the Lyon Creek stream corridor, including removal of existing invasive species such as reed canarygrass and Himalayan blackberry.

2. **Issue or Impact to be addressed:** The DEIS fails to accurately identify all streams and wetlands within projected project areas. For example Barnacle Creek at Portal Site 19/Outfall (Figure 6-20) is not depicted nor are the associated wetlands. C6-27

Recommended Mitigation Measure: Perform a complete inventory of watercourses and wetlands in project area and consult the City of Shoreline resources. C6-28

3. **Issue or Impact to be addressed:** Impacts from construction activities are referred to as transient and will no longer be a factor to water quality health. This

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Response to Comment C6-26

The Final EIS text has been corrected to read that the receiving water body for dewatering discharge from Portal 3 is the Puget Sound. The sanitary sewer and the local stormwater conveyance system are proposed discharge options at this location.

For the impacts discussion, please refer to response to the City of Shoreline, Comment C6-25. Measures would be taken to avoid discharging dewatering water at a rate more than 10 percent of the receiving water flow rate. Should the dewatering discharge rate be greater than 10 percent of the receiving water flow rate, additional disposal methods would be used. Please refer to Chapter 7, Impacts section, of the Final EIS for a discussion of impacts to fish populations in McAleer Creek.

For the mitigation discussion at Portal 7, please refer to the response to the City of Kenmore, Comment C3-88, for a discussion of alternative dewatering discharge disposal options and Ecology's 10 percent guideline. Should impacts occur as a result of dewatering discharge, restoration or enhancement would be conducted according to local regulations. King County would coordinate with affected local jurisdictions for appropriate mitigation projects. Also, please refer to the response to Comment C6-25 in this letter.

Due to a change in the project description, Portal 27 is now classified as a secondary portal for the Route 9-195th Street corridor only, and is no longer being considered for the Route 9-228th Street or Unocal corridors. Secondary portal construction is not anticipated to be required. However, this may change due to the relatively long length of the tunnels. The following are scenarios that result in the use of secondary portals: auxiliary ventilation, deep ground improvement, and supply of backfill grout. Please refer to Appendix 3-B, Project Description: Conveyance, of the Final EIS for a description of the four scenarios. The final decision regarding secondary portals would be made during final

design, after the conveyance route has been selected and final locations for portal sites have been chosen.

Response to Comment C6-27

The City of Shoreline has been consulted and a copy of the City of Shoreline Stream and Wetland Inventory and Assessment was obtained. This information has been incorporated into appropriate Final EIS tables, figures, and text.

Response to Comment C6-28

King County proposes to build stormwater treatment facilities for the duration of the construction period at each portal site (2 to 5 years). These facilities would be guided by the Washington State Department of Ecology's (Ecology) *Stormwater Management Manual for Western Washington* (August 2001) guidelines. King County will also be regulated under an Individual NPDES Construction Stormwater Permit by Ecology. Construction activities would also meet or exceed state Surface Water Quality Standards (Chapter 173-201A WAC) in receiving waters. Please refer to Appendix 6-F, Groundwater and Stormwater Management at the Candidate Portal Sites, of the Final EIS, for a discussion of portal stormwater treatment facilities that would provide detention and treatment of stormwater runoff during portal construction. Construction BMPs and stormwater facilities should be adequate to prevent excessive discharges of sediments and petroleum products. Monitoring would be conducted and advanced treatment measures implemented, if necessary to meet Water Quality Standards. Also, please refer to the response to the City of Bothell, Comment C2-9, for a discussion of monitoring that would be conducted during and after construction to ensure the protection of streams, wetlands, and aquifers, and that would establish corrective actions necessary should impacts be detected.

fails to recognize that some impacts, i.e., increase to sediment, peak flows, spills of oils and grease and construction material, can last for generations.

C6-28 **Recommended Mitigation Measure:** An accounting of life expectancy for anticipated cumulative and singular impacts should be generated with appropriate mitigation. King County should establish and operate a long term monitoring program to assess these impacts. Mitigation should include a post-construction bond or dedicated a fund account for a period not less then 10 years during which these funds could be used to pay for the costs of monitoring and mitigating these impacts.

C6-29 4. **Issue or Impact to be addressed:** The stormwater treatment is planned only for the newly created impervious surfaces at the treatment site. However, Shoreline's redevelopment guidelines require the entire site which includes portals and associated impervious surfaces to achieve 2001 King County Stormwater Manual standards i.e. treat runoff as if the site was being converted from a forested condition to impervious surfaces. This will modify the current plan and design of the conveyance and outfall.

Recommended Mitigation Measure: Design all portions of the project to meet the 2001 King County Stormwater Manual. Note: on page 6-36 and 6-41 fish impacts are not mentioned for McAleer Creek.

C6-30 5. **Error or Inconsistency:** On the top of page 6-60 of the DEIS under *6.4 Significant Unavoidable Adverse Impacts*, a statement is made that "Some unavoidable adverse impacts to surface water resources may occur during construction if mitigation measures are not consistently applied or maintained, however they are not anticipated to be significant." This statement includes several contradictions or inconsistencies. First, it casts doubt on the proponent's commitment to apply the mitigation measures that have been described.

The commitment to provide adequate mitigation needs to be reiterated and emphasized, and a contingency plan should be developed for use if mitigation is either ineffective, insufficient, incorrectly implemented, or not implemented as planned. Second, it is incorrect to call these impacts "unavoidable" if they are the result of inadequate or incomplete mitigation. These impacts could potentially be avoided if mitigation is implemented as planned. Finally, it seems plausible that if mitigation measures are neglected or are insufficient, that some of the impacts could be significant rather than insignificant as stated.

C6-31 6. **Issue or Impact to be addressed:** On page 6-17 of the DEIS under *6.1.4.1 Water Circulation*, it is described that higher salinity, denser water enters Puget Sound at depth from the north and that lower density, less saline waters exit Puget Sound near the surface. Thus, surface waters in Puget Sound are generally moving towards the north while waters at greater depths are generally moving towards the south. The transition from northbound surface waters to southbound deeper waters is reported (bottom of page 6-17) as occurring at approximately 360

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Response to Comment C6-29

The Brightwater project would take into account the Guidelines of the Washington State Department of Ecology *Stormwater Management Manual for Western Washington* (August 2001), which calls for stormwater control to forested conditions. Please refer to the response to the City of Bothell, Comment C2-9, and response to Comment C6-28 in this letter. For a discussion of potential impacts to fish habitat, refer to Chapter 7, Impacts section, of the Final EIS.

Response to Comment C6-30

The Final EIS text has been revised (Chapter 6, Significant Unavoidable Adverse Impacts) to discuss the intention of King County to follow the Stormwater Pollution Prevention Plan that would be developed as part of the Individual NPDES Construction Stormwater Permit. The SWPPP would outline mitigation measures that would be employed to avoid and minimize impacts; monitoring to track potential impacts as well as proper implementation of mitigation measures; and corrective actions to be implemented if initial mitigation measures are insufficient.

Response to Comment C6-31

King County will design the outfall to accomplish three tasks. First, provide substantial dilution of the effluent with surrounding waters; second, prevent a poorly diluted plume from encroaching on shellfish beds or areas of human activity; and third, provide the opportunity for the effluent to be transported out of Puget Sound. Since the second and third tasks are best accomplished by opposing rise heights, King County has decided that it is best to always keep the plume deep and away from human activity. As a result, the plume will initially flow southward where it will be continually diluted into the northward flowing surface water and out of Puget Sound.

feet of depth. Surface waters tend to have a lower salinity and resulting lower density due to the discharge of fresh water from the rivers and streams entering Puget Sound at the surface.

The outfall for the treated sewage effluent is proposed to discharge at up to 700 feet of depth. At first consideration, it would seem that the deeper the discharge, the better. However, discharging at these depths controverts the natural processes described above whereby fresh water from rivers and streams is discharged at the surface and subsequently tends to migrate to the north and out of Puget Sound. The proposed sewage outfall would discharge low-salinity, "fresh" water at depth rather than at the surface, and into the higher salinity water which is moving southward into southern Puget Sound.

C6-31 **Recommended Mitigation Measure:** The EIS should consider and evaluate a compromise discharge depth of perhaps around 300 feet which could still be deep enough to minimize effects at the surface, yet shallow enough to allow discharge into a depth zone which would tend to carry the effluent water northward and out of Puget Sound sooner. Questions to be covered: How deep, typically, is the euphotic zone, below which light levels rather than nutrients limit phytoplankton growth? Is it high enough such that water could be discharged below it and still be within the zone of waters tending to move northward and out of Puget Sound?

C6-32 7. **Issue or Impact to be addressed:** A dock is being proposed to be built if Zone 6 is chosen for the outfall to aid in reducing impacts of construction traffic on surrounding neighborhoods. It does not appear that a dock is being proposed in Zone 7. Why is there no dock planned for Zone 7 and the construction of portal 19 as there is only one access road?

Recommended Mitigation Measure: If feasible, a dock should be constructed at Zone 7 to reduce construction traffic in Shoreline if either of the Route 9 alternatives are to be constructed.

C6-33 8. **Issue or Impact to be addressed:** Brightwater construction and operation may significantly and cumulatively adversely impact critical areas and marine shorelines.

Recommended Mitigation Measures:

a. Impacts to streams and wetlands, including impacts to McAleer Creek, Lyons Creek, watercourses in the Richmond Beach neighborhood, and related tributaries, must be minimized. Deep tunneling should be used to minimize impacts to steams and wetlands. Stream and wetland crossings must be designed based on the Best Available Science to minimize impacts. Portals and pump stations should not be located or designed in a manner that impacts critical areas. Where critical areas are impacted, restoration and enhancement ratios must be sufficient to ensure no degradation in the function or value of critical areas on a basin scale.

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Response to Comment C6-32

Use of a construction barge dock is not part of the proposal for the Unocal System. If the Unocal System alternative is selected for the Brightwater System and if King County decides to pursue using a construction barge dock, the Port of Edmonds will be consulted and the additional necessary environmental review associated with this option, including disposal of materials, will be conducted. Updated information regarding this option is available in the revised project description in Appendix 3-C, Project Description: Outfall, of the Final EIS.

Response to Comment C6-33

In developing the portal locations, measures would be taken to avoid and protect streams, and other critical areas. Please refer to Chapters 6 and 7 of the Final EIS for a discussion of impacts to streams and wetlands and proposed mitigation measures.

C6-34

b. Because impacts may not be fully or appropriately mitigated on-site, suitable compensatory mitigation sites should be identified within City boundaries, preferably within in the same drainage basis as project impacts. The County should consider restoration of Ballinger Creek where it has been adversely impacted by the development of the King County maintenance facility (near proposed Portal #7). The City needs to be fully involved in any future effort to identify potential mitigation sites.

C6-35

c. All efforts should be made to utilize tunnel/bore construction methods and to avoid trench construction methods in Outfall Zone 7S.

CHAPTER 7 PLANTS, ANIMALS, AND WETLANDS

C6-36

1. **Issue or Impact to be addressed:** On Page 7-28 regarding Portal 7 the DEIS does not identify City of Shoreline as having jurisdiction. The description lacks other stream features and water quality data.

Recommended Mitigation Measure: The City of Shoreline should be consulted for future description and assessment of Portal 7's activities.

C6-37

2. **Issue or Impact to be addressed:** On Page 7-35 regarding Portal 19 the description of streams and wetlands is incomplete.

Recommended Mitigation Measure: The City of Shoreline should be consulted with for future description and assessment of Portal 19's activities. A complete survey and inventory should be done to identify wetlands and streams associated with the Pt. Wells property at Portal 19.

3. **Issue or Impact to be addressed:** On Page 7-38 Portal 23 contains the upper headwaters to Storm Creek and this is not noted in the DEIS.

Recommended Mitigation Measure: Consult the City of Shoreline and include in the FEIS.

C6-38

4. **Issue or Impact to be addressed:** Proposed mitigation for potential impacts to aquatic resources, vegetation and associated wildlife habitat from erosion, sedimentation, turbidity, and/or from dewatering and dewatering water discharge are very generalized and may be somewhat understated. Potential impacts to streams, wetlands, marine habitats, plants and associated wildlife habitats and species could be significant and there are likely impacts that cannot be anticipated until the project details are designed and construction is underway. Prevention of potential impacts will be particularly important in the vicinity of Portals 5, 7, 19 and 27 and in the vicinity of Outfall Zone 7S.

Sedimentation is the only impact identified. Other impacts from portal siting are lost and disruption to the natural hydrology of the sites, increased nutrient runoff (eutrophication of streams) loss or reduction of biodiversity, increases in

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Response to Comment C6-34

If restoration or enhancement mitigation is needed due to project-related impacts to streams, wetlands, and/or buffers, replacement ratios would be followed according to local regulations. King County would be open to suggestions for mitigation projects that would satisfy these requirements while mitigating impacts related to the Brightwater project.

Response to Comment C6-35

Please refer to the response to the National Oceanic and Atmospheric Administration Fisheries (NOAA Fisheries), Comment F1-4.

Response to Comment C6-36

The northern half of Portal Siting Area 7 is in the City of Shoreline and the southern half is in the City of Lake Forest Park. This clarification is presented within Chapter 3 of the Final EIS.

For preparation of the Final EIS, access to streams, wetlands, and upland habitats was limited to observations from public right-of-way. Therefore, information on stream features (i.e., habitat types, physical and biological characteristics) was collected from "windshield" surveys, and from existing documentation, where available. Additional information on water quality is presented in Chapter 6. The City of Shoreline was consulted for preparation of the Final EIS, and the EIS incorporates information from the City of Shoreline Stream and Wetland Inventory and Assessment.

Various detailed baseline studies will be conducted where necessary to support permitting for streams, wetlands, and water bodies prior to construction of the Brightwater conveyance system. Please refer to the response to the City of Kenmore, Comment C3-25.

Response to Comment C6-37

The City of Shoreline was consulted and a copy of the City of Shoreline Stream and Wetland Inventory and Assessment was obtained. Information from this report was used to complete a description of streams and wetlands in the vicinity of candidate portal sites within Portal Siting Areas (PSAs) 19 and 23. Additional site visits were made to PSAs 19 and 23 as necessary to further characterize wetlands and streams. Information gathered from the stream and wetland report and the site visits indicate that there are no aquatic resources located in PSA 23. This information is provided in Chapter 7 and Appendix 7-A, Affected Environment: Plants and Animals, of the Final EIS.

Response to Comment C6-38

Various best management practices (BMPs) will be employed during construction to avoid and mitigate effects on aquatic resources, vegetation, and associated wildlife from dewatering and dewatering water discharge; and erosion and sedimentation. Since issuance of the Draft EIS, substantial progress has been made on the development of these BMPs as part of the Brightwater predesign effort. This information is presented in Appendices 6-C, Management of Water Quality During Construction at the Treatment Plant Sites, 6-D, Permanent Stormwater Management at the Treatment Plant Sites, and 6-F, Groundwater and Stormwater Management at the Candidate Portal Sites.

Many general impacts are discussed in Chapter 7 of the Draft EIS, including construction and operational impacts such as erosion and sedimentation; accidental and incidental discharge of pollutants; removal and discharge of dewatering water; and increased noise, lighting, and human activity; and vegetation clearing. These impacts have been developed further and are presented more specifically in the Final EIS.

In the Final EIS, three or four candidate portal sites are presented within each portal siting area. Candidate portal site selection involved avoiding impacts to high-quality wetlands, streams, and mature upland forests. Based on the approximate boundaries of wetlands, streams, and mature upland forest, impacts were calculated based on an approximate 2-acre portal construction footprint. Preferred portal sites avoid impacts to the maximum practicable extent. Impacts that are completely avoided include fill impacts to Category 1 and 2 wetlands and displacement/realignment of streams. In some cases, it may be necessary to fill Category 3 or 4 wetlands, or impact buffers.

In the design process, which would follow publication of the Final EIS, various detailed baseline studies would be conducted for streams, wetlands, and water bodies prior to construction of the Brightwater conveyance system. These studies would be used to define specific impacts. In accordance with Section 7 of the Endangered Species Act, a Biological Assessment would be conducted for the project, and would present baseline studies for habitat that supports fish and wildlife species listed as threatened, endangered, proposed, or candidate. In accordance with local, state, and federal regulations, wetland delineation reports and stream special studies would be prepared for each Brightwater construction site proposed near a wetland or a stream. In accordance with local regulations, inventories of significant trees would be conducted for each construction site, and tree retention plans would be developed. Results of the baseline studies would be used to develop appropriate mitigation plans for wetland, stream, and forest impacts.

contaminates from construction equipment and material, increase in stream temperature from loss of shade and decrease in allocanthous material to the streams and wetlands.

C6-38 **Recommended Mitigation Measure:** The future project design needs to incorporate ample safeguards to prevent, limit and lastly mitigate any impacts in these areas.

C6-39 5. **Issue or Impact to be addressed:** The section called 7.2.4.2 Operational Impacts seems inconsistent with section 7.3.5.2, which states no need for mitigation due to lack of impacts from operating the outfall. The magnitude of impacts is tied to assumption that effluent will remain 70' below the surface. Freshwater is lighter than seawater and therefore it should rise to the surface. It would mix along the way but eventually there would be a core plume like smoke rising to the surface and exposed to higher mobility and transportation rate.

Recommended Mitigation Measure: This needs to be correctly identified or explained why it is believed that the effluent will only get to within 70' of the surface.

C6-40 6. **Issue or Impact to be addressed:** 7.3.5.2 Operational: no mitigation is planned for operating the outfall yet impacts are anticipated due to "…will add small increment to the overall trend of increased nutrient, metal, and solids inputs to Puget Sound…" (pg. 6-51, 6.2.6). The cumulative impact is present and should be accounted for relative to mitigation.

Recommended Mitigation Measure: Areas to mitigate may be actions to clean up or improve degraded conditions, i.e. lack of shoreline erosion and tidally influenced wetlands. What is the expected recovery time for construction of the outfall? Trenching and excavation of dense eel grass beds is not adequately mitigated. Monitoring and mitigation for construction impacts and post maintenance should be considered.

C6-41 7. **Issue or Impact Identified:** On Page 7-94, maintenance of the diffuser calls for cathodic protection of steel pipelines. This most likely refers to the placing of zinc plates onto the steel to reduce deterioration of steel from electrolysis of seawater. This common practice through out the marine environment could potentially add tons of zinc to the waters.

Recommended Mitigated Measure: This impact from the Brightwater project needs to be analyzed and appropriate mitigation developed.

C6-42 8. **Error or Inconsistency:** On Page 7-94 emergency discharges of untreated effluent are identified without any assessment of impact or needed mitigation. In other portions of the DEIS it is stated that there is no chance of untreated effluent being released at Zone 7. If there is a chance that untreated effluent may be discharged via the outfall this must be addressed in FEIS.

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Response to Comment C6-39

The discharge momentum and the density differences between the effluent and the receiving waters control the initial dispersion of the plume. During the initial rise, the effluent will become mixed with the surrounding waters. When it eventually reaches the same density as the surrounding water, it will no longer continue to rise. This is referred to as the trapping depth, and can be controlled by altering the diffuser design. King County will design the diffuser to maintain a trapping depth of 70 feet to assure that the plume stays away from commercial shellfish beds and to minimize the possibility of human contact in the surface waters. For complete analysis of the plume dilution and dispersion, please refer to Appendix 6-H, Predesign Initial Dilution Assessment, of the Final EIS.

Response to Comment C6-40

Cumulative impacts to Puget Sound surface water quality from the construction and operation of the Brightwater Treatment Plant and outfall were evaluated to account for existing and possible future discharges and contaminant loadings to Puget Sound. More complete discussion of the cumulative impacts is provided in Chapter 6 of the Final EIS.

In the examination of potential impacts to surface water quality, King County added loadings from the Brightwater discharge to existing conditions in Puget Sound to examine cumulative impacts. This quantitative assessment is believed to be a reasonable approach because there are no known plans for additional point source discharges in the area and there are concentrated efforts in the region to improve the water quality of Puget Sound. King County and other municipal governments in the area are continuing efforts to increase the quality of their discharges in response to stricter regulatory requirements of the Endangered Species Act, Growth Management Act, and other environmental regulations. For example, there

are planned improvements to combined sewer overflows; other capital improvement projects will have vastly improved stormwater management infrastructure, which will reduce the loadings to Puget Sound. Both the City of Edmonds and King County have plans to improve the performance of some of the existing outfalls in Puget Sound. Similarly, King County is proposing to use membrane bioreactor treatment technology for the Brightwater System in an effort to minimize the loadings to Puget Sound. Based on this information, it is expected that Puget Sound water quality will continue to improve over time and no additional water quality standard violations will occur due to discharges from the Brightwater Treatment Plant.

King County and other regional governments are committed to improving the water quality of Puget Sound through the improvement of existing infrastructure and using the best available technology for new systems.

Response to Comment C6-41

If the pipeline were constructed of steel, an impressed current cathodic protection system would likely be used to prevent corrosion of the pipeline. Impressed current systems are based on an external source of current (cathodic protection rectifier) to reverse corrosion currents. The rectifier is connected to the pipeline, as well as a group of buried metal rods that are sacrificially corroded instead of the pipeline. The current King County maintenance schedule for cathodic protection systems on other outfalls includes quarterly monitoring of the rectifier and monitoring of the current interceptors every 5 years. Sacrificial zinc plates will not be used as corrosion protection.

Response to Comment C6-42

Please refer to the response to the City of Edmonds, Comment C9-60, for the estimated emergency discharge frequency to the Sammamish River. By using the effluent outfall in emergency situations before discharge of untreated wastewater to marine waters, impacts to the ecosystem will be minimized because the discharge will still receive the high rates of dilution prior to encountering the nearshore area. While the scientific information regarding the potential impacts of bioaccumulative compounds is unresolved, King County believes that the high level of treatment and the substantial dilutions that will be achieved with the Brightwater outfall minimize the potential for adverse impacts from these stressors. Many organic compounds are removed during the treatment process. A complete summary of the available information on the removal efficiency of the membrane bioreactor treatment system is detailed in Appendix 6-I, Effluent Quality Evaluation for the Brightwater Membrane Bioreactor and Advanced Primary System.

C6-42 9. **Issue or Impact to be addressed:** On Page 7-96 "Bioaccumulation of certain chemicals" - Category 3's use of Brightwater's effluent being "relative to other sources" as insignificant masks a potential that a risk is present. The justification that because other sources pollute more thus making Brightwater a cleaner player ignores fundamental assessment of impacts. The concentration of these chemicals is at question not who is a larger contributor of these various chemicals. This section is weak and cannot guarantee no or insignificant risk to the environment. What is the fate of antibiotics, growth hormones, steroids, caffeine, prescription drugs, and other typical household generated hazardous waste?

C6-43 **Recommended Mitigation Measure:** Continually test and monitor the presence and level of such substances as antibiotics, growth hormones, steroids, caffeine, prescription drugs and other household generated hazardous wastes both in the effluent and for accumulation in the biotic community starting with the outfall zone. Also, develop an on-going program to remove these chemicals from the effluent and dispose in a safe manner.

C6-44 10. **Issue or Impact to be addressed:** In section 7.2.6 Cumulative Impacts, erroneous credit is given to the action of to minimize impervious surfaces at all facilities. It has been stated that even with that, cumulative impacts will occur. Delete this as mitigation for cumulative impacts. Cumulative impacts can be the single largest factor to degradation of air and water qualities.

Recommended Mitigation Measure: More needs to be assessed here especially how this impact will be measured and mitigated.

C6-45 11. **Error or Inconsistency:** In section 7.3.2.1 "Mitigation Measures Common to both sites", impacts of impervious surfaces from direct construction and the operational aspects of the project are mentioned. The increases in impervious surfaces due to increasing the allowable development within the areas served by the sewer are not addressed. The DEIS's policy of not addressing this indirect impact both as a singular and cumulative impact is very significant.

C6-46 12. **Error or Inconsistency:** Table 7-12 on Page 7-4 attributes the jurisdiction of Bruggers Bog to Lake Forest Park. This area is within the boundaries of the City of Shoreline.

CHAPTER 8 ENERGY AND NATURAL RESOURCES

C6-47 1. **Issue or Impact to be addressed:** On Page 8-15 of the DEIS, it is stated that diesel generators may be used if power lines or a substation are not available. Although this risk is said to be low, in order to protect our residents, businesses, and natural environment, specific mitigation is requested to reduce the noise and odor impacts associated with the use of a generator should one be required.

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Response to Comment C6-43

The frequency at which effluent monitoring occurs will be identified in the NPDES permit. Presently, King County monitors effluent quality semi-annually, as dictated by the NPDES permit, for a suite of organic chemicals. King County is taking a proactive step in monitoring effluent by participating in a nationwide EPA study on endocrine disrupting chemical in municipal wastewater. King County's commitment to improving the quality of its discharge is evidenced by employing state-of-the-art treatment technologies, such as membrane bioreactors.

King County's field monitoring program is detailed in Appendix 3-I, Proposed Routine Monitoring Plan for the Receiving Environment in the Vicinity of the Brightwater Treatment System Marine Outfall, of the Final EIS. This plan includes the monitoring of surface water, sediments, and biota in the vicinity of the outfall.

Response to Comment C6-44

Thank you for your comment. The cumulative impact discussions for all chapters in the Final EIS have been revised.

Response to Comment C6-45

Please refer to Chapter 6 and Appendix 6-D, Permanent Stormwater Management at the Treatment Plant Sites, of the Final EIS, for a discussion of impervious surface impacts and stormwater management at the treatment plant sites. Also, please refer to the response to the Snohomish County Planning and Development Services, Comment S3-82.

Response to Comment C6-46

The Final EIS text in Chapter 7 has been revised to state that Bruggers Bog is in the jurisdiction of the City of Shoreline.

Response to Comment C6-47

King County will work with appropriate jurisdictions and agencies to obtain permits required for the construction and operation of the Brightwater System, including emergency generators.

C6-47 **Recommended Mitigation Measure:** A Temporary Use Permit should be obtained from the City of Shoreline to approve and condition the siting of a generator to ensure protection of neighboring property owners.

C6-48 **CHAPTER 9 ENVIRONMENTAL HEALTH**

The DEIS seems to adequately and accurately identify impacts to environmental health.

C6-49 **CHAPTER 10 NOISE AND VIBRATION**

Comments on impacts and mitigation concerning noise and vibration as these could potentially affect aquatic environments, vegetation and associated wildlife are provided above in the discussion of Chapter 7. Mitigation measures must consider the noise and vibration emanating from the construction and operation of portals, pump stations, and a dechlorination facility to protect and restore the ambience to surrounding neighborhoods.

CHAPTER 11 LAND AND SHORELINE USE

1. **Issue or Impact to be addressed:** Short and long term impacts associated with the construction and operation of the outfall on the marine environment, residents, and public recreation.

C6-50 **Recommended Mitigation Measure:** Public shoreline access improvements should be incorporated into the design of the outfall facility or provided in a location near the Outfall Zone 7S area based on input from the City and citizens impacted by outfall construction and operation. Public access to the shoreline in the Outfall Zone 7S area is currently restricted due to limited public access points, the Burlington Northern railroad tracks, and rugged terrain. Policy EN66 in the *Environmental Element* of the City of Shoreline's Comprehensive Plan states that additional public access shall be provided to Shoreline's natural features, including the Puget Sound Shoreline. As mitigation the City requests the County to: construct a pedestrian overpass or tunnel at the pump station or on the southern portion of the Pt. Wells property; develop the pump station site or Pt. Wells site for public access and use; secure beach access rights from the railroad; and provide safety fencing along both sides of the tracks if it is required by BNSF Railroad.

C6-51 **CHAPTER 14 RECREATION**

1. **Issue or Impacts to be addressed:** The City has concerns about potential impacts to the park at Bruggers Bog from the construction of a portal at the adjacent King County Maintenance Yard. This is the only city park in this area and it serves several multi-family complexes.

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Response to Comment C6-48

Thank you for your comment.

Response to Comment C6-49

Due to the close proximity of the nearest residences to the Brightwater facilities, construction noise and vibration would have impacts to residences during the exempt weekday hours. The Final EIS shows that the nearest residence to the Unocal site could be subject to 82 dBA, which is 23 dBA above the maximum ambient L_{10} level of 59 dBA. The Final EIS shows that the nearest residence to the Route 9 site could be subject to 84 dBA, which is 17 dBA above the maximum ambient L_{10} level of 67 dBA. Construction activities outside of exempt hours would only occur if a permit or variance were issued by the appropriate jurisdiction; noise levels outside of normally exempt periods, if allowed, would conform to the noise level requirements specified in the permit or variance. Operational noise levels would have some impact on existing minimum hour ambient noise levels. The operational noise level impact is limited to a 5 dBA increase in the minimum hour ambient noise level by mitigation of facility noise sources. This level of increase would be audible, but would be within permissible noise limits established in local codes. Also, please refer to the responses to the Snohomish County Planning and Development Services, Comments S3-132 and S3-133.

Response to Comment C6-50

At the City of Shoreline's request, King County is exploring options for establishing public access to the shoreline associated with the Zone 7S outfall including a pedestrian overpass. To date, King County has evaluated several locations for an overpass, but construction at the locations is not feasible. King County will work with local jurisdictions, surrounding residents, businesses, and other key stakeholders on mitigation and design issues related to portal siting areas.

The issue of proposed access improvements will be coordinated during these efforts.

Response to Comment C6-51

Screening conducted as part of the Brightwater Conveyance Predesign identified candidate portal sites that best met engineering needs and minimized environmental and community impacts. Bruggers Bog Park was not selected as a portal site; however, a parcel directly south of the park has been identified as a portal site. Best management practices discussed in Chapter 7 of the Final EIS would be utilized to ensure construction activities and portal operation would not adversely affect the adjacent natural environment of the park. Please refer to Appendix 2-B, Portal Screening Level 1 and 2 Documentation, of the Final EIS for additional discussion of the portal screening process.

C6-51

C6-52

Recommended Mitigation Measures: Improvements to the existing Bruggers Bog Park should be included as project mitigation for construction at Portal 7. Improvements should be implemented by King County in consultation with the City of Shoreline. The City expects that there will be no net loss in area at this park. Should access to the park be restricted during construction, the City expects to be compensated.

C6-53

2. **Issue or Impacts to be addressed:** Construction of Portal 19 and the outfall and the operation of the outfall in zone 7S could have short and long term impacts on the near shore environment including Richmond Beach Saltwater Park or any public of private beachfront.

Recommended Mitigation Measures: Development of an environmental interpretive component should be considered for public education if the outfall zone is located at zone 7S. This property should be designated for a nature preserve to encourage the return of wildlife displaced from their habitat during the construction of the portal and outfall.

C6-54

2. **Issue or Impact to be addressed:** The City is concerned about potential impacts to the Aldercrest School site located within the Portal 7 area such as: restricted access, construction site risks for school age children, increased traffic around the school etc. In addition, the City understands that the School District will begin construction on improvements at the Aldercrest School site in the near future. It will be important to coordinate with the School to minimize the impacts of construction at both sites on the neighborhood. This is especially important since 25th Avenue NE is the primary access to this neighborhood.

Recommended Mitigation measures: Coordinate with the Shoreline School District should this portal be constructed north of Ballinger Way to identify if there will be any risks to the school associated with the construction or operation of the portal and mitigate accordingly. Explore with the School District the feasibility of constructing the portal on a portion of the Aldercrest School site. Improve the athletic fields at the Aldercrest School site.

CHAPTER 15 CULTURAL RESOURCES

C6-55

The DEIS seems to adequately and accurately identify impacts to cultural resources in Shoreline. The mitigation proposed for these impacts also seems adequate.

C6-56

CHAPTER 16 TRANSPORTATION

1. **Issue or Impact to be addressed:** The traffic analysis used P.M. peak hour traffic to evaluate worst-case traffic conditions. However, unique characteristics of the various neighborhoods should also be considered, for example Saturday traffic at Costco, morning peak traffic, traffic near schools (beginning at 2:30), etc.

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Response to Comment C6-52

Where possible, King County has tried to avoid recreational areas with sensitive environmental features in the identification of candidate portal sites associated with the Unocal and Route 9 Systems. SR 104/Ballinger Way NE is a primary arterial that will be used by construction vehicles. Users of Bruggers Bog Park would be subject to intermittent delays in accessing the park during construction. Mitigation measures would be implemented to ensure that pedestrian and motorist access to the park is maintained at all times. Please refer to Chapter 16 of the Final EIS for a complete description of mitigation measures to ease traffic delays and number of construction vehicle trips calculated on various roadways.

King County would need to assess impacts and work with the City of Shoreline during the permitting process to determine if providing improvements to Bruggers Bog Park is a necessary and feasible mitigation measure.

Response to Comment C6-53

Please refer to the response to Comment C6-50 in this letter. As discussed in Chapter 7, short-term impacts to the nearshore environment would be unavoidable during and immediately after completion of construction. Please refer to this chapter for a discussion of best management practices that would be utilized throughout the duration of construction to ensure that adverse impacts to the surrounding environment are minimized. King County would need to assess impacts and funding allocated to mitigation to determine mitigation measures related to outfall construction in Zone 7S.

Response to Comment C6-54

Portal Siting Area 7 is designated as a primary portal for the Unocal System and as a secondary portal for the Route 9-195th Street System. Recent Level 2 portal screening that was conducted as part of the Brightwater Conveyance Predesign identified the Aldercrest School site as one of the candidate sites to carry forward for further screening. King County will

work with local jurisdictions, surrounding residents and businesses, and other key stakeholders on mitigation and design issues.

Response to Comment C6-55

Thank you for your comment.

Response to Comment C6-56

Additional analysis was conducted for the weekday AM peak hours for intersections in the City of Shoreline. It is anticipated that all major construction staging and hauling operations would be scheduled on weekdays, with some onsite construction on weekend days depending on the work days and hours determined during the permitting process. Impacts to Costco shoppers on Saturdays would be minimal. The traffic management plan would address safety concerns related to construction truck traffic during school release times and would be finalized during the local permitting process. Additional detailed analyses of construction traffic related to specific portal locations are included and construction traffic routes and traffic impacts are identified in Chapter 16 of the Final EIS. Please refer to Appendix 16-B, Transportation Impacts: Plant Sites and Conveyance, of the Final EIS for greater detail.

For determining level-of-service in the Draft EIS, a passenger-car-equivalency (PCE) of 2.0 was used for all trucks. For the Final EIS, an increased level of detail was included in the analysis. A PCE of 2.0 was used for concrete and material delivery trucks, while earthwork trucks were assigned a PCE of 4.0. Chapter 16 of the Final EIS has been revised to include the description of the truck types assumed and the PCE factors used for each.

C6-56

Recommended Mitigation Measures: The County traffic analysis should include this site specific analysis in the FEIS. Additionally, passenger car equivalents shall be clearly stated for construction trucks (trucks, trucks and trailers, etc.).

C6-57

2. **Issue or Impact to be addressed:** The portal locations will have other adverse impacts to abutting roadways and intersections based on their actual location and the type of trucks used (trucks with trailers for example) to remove spoils, turning radii, etc. The short and long term impacts to the physical condition of the local roadway system are not addressed. The current condition of these roads is variable and would be severely impacted by this type of heavy vehicle traffic.

Recommended Mitigation Measures:

a. Widen roadways as required to provide adequate turning radii for construction vehicles. Perform structural analysis of roadways, prior to use to determine pre-construction structural integrity. Overlay affected streets prior to construction and overlay or reconstruct roadways that are damaged or compromised (design life reduced) by hauling operations, construction related activities, or operational activities associated with the Brightwater project.
b. Provide construction site maneuvering for the truck traffic and remove them from the transportation system as quickly as possible for standard loading and unloading activities.

C6-58

3. **Issue or Impact to be addressed:** The DEIS traffic analysis evaluated impacts at two separate base years, 2010 and 2040. The 2010 year was assumed to represent the baseline for both construction impacts and opening year operational impacts (see page 16-30). However, this does not necessarily reflect a "worst case scenario" in regard to LOS impacts since construction activities are noted to commence in 2004 and last up to six years at each portal location. More particularly, LOS may exceed local standards adopted by the City for the year 2004, 2005, 2006, etc., and thereby require additional mitigation.

Recommended Mitigation Measures: As such, truck and employee trips should be evaluated at 2004 to access overall LOS impacts to the existing streets and intersections during construction. As currently stated, their analysis calculates LOS failures in 2010 without their project, and as such, the Brightwater Project would not make matters worse (once they have failed), ergo no mitigation required. However, this project might cause LOS detriments in the construction phase, which was not analyzed.

C6-59

4. **Issue or Impact to be addressed:** Truck traffic and haul impacts were restricted by the County in regard to the "regional transportation system", as stated on page 16-30. However, the number of truck trips utilized (worst case scenario) would appear inaccurate for the following reasons:

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Response to Comment C6-57

Please refer to the response to Comment C6-56 in this letter. State route and arterial roadways were assumed to be structurally adequate to accommodate the construction traffic from the project.

A traffic management plan (TMP) addressing the proposed mitigation measures for the portal construction traffic impacts would be developed and is described further in the Final EIS. This plan would include construction scheduling, hours of work, necessary improvements to the roadway network to maintain adequate traffic operating conditions, traffic control, and circulation plans to ensure safety to all travel modes along the affected roadways. These measures would be finalized by King County in conjunction with the affected jurisdictions during the construction permitting process. The TMP would also include a plan for monitoring and restoration of streets to pre-existing conditions, access for emergency services, and safe access for pedestrians and bicyclists, and would control the movement of workers, equipment, and delivery materials to minimize the traffic impacts along project access corridors. Construction-related activities, such as loading and unloading, would occur onsite and not on the transportation system.

Response to Comment C6-58

The Draft EIS analysis assumed that all portal sites would be under construction at the same time and overlaid peak construction traffic that was expected to occur sometime prior to 2010 on the 2010 background traffic. This effectively established a "worst-case" scenario for traffic impacts associated with portal site construction. Use of a 2004 analysis year as suggested could not be worse than the condition analyzed. The current proposed construction schedule would be from 2005 to 2009. Based on peak construction periods for portal and site construction, the detailed analyses of construction traffic were updated to represent the peak construction year of 2007. Please refer to

Appendix 3-G, Construction Approach and Schedule, of the Final EIS for information on schedule and sequence of construction and to Appendix 16-B, Transportation Impacts: Plant Sites and Conveyance, of the Final EIS for greater detail on the traffic impact analyses.

Response to Comment C6-59

Spoils generated at a portal site and the resulting truck trips were correct as stated in the Draft EIS. The estimations of spoils generated at primary portal sites, resulting truck trips produced, and the traffic analysis for arterial and non-arterial streets have been updated. Additional detailed analyses of construction traffic related to specific portal locations, including Portal 19, have been included and construction traffic routes and traffic impacts are identified in Chapter 16 of the Final EIS. Only one site at Portal 19 would be constructed for the outfall, not two. Tunneling would be accomplished in only one direction from each primary portal. Please refer to Appendix 3-G, Construction Approach and Schedule, of the Final EIS for information regarding schedule and sequence of construction.

a. Portals can be used to tunnel in opposite directions. As such, spoils generated at an individual site could be higher than the report suggests based on their stated production rate of 50 lineal feet of tunneling (14-foot diameter tunnel per day). One tunnel could effectively generate 300 CY/day. Two tunnels depositing spoils from the same portal could generate 600 CY/day (±). This converts to 60 round trips per day (single, 10-CY dump truck). This would be in addition to other equipment and material delivery needs and employee generation trips. The traffic impact analysis should reflect same. This is also true of portal 19 where two portals are likely to be constructed, and, open excavation of the outfall may occur which would generate significantly more spoils than tunneling operations.

b. No traffic analysis was found for the construction traffic generated on surface streets (non-arterial) which may be used to access portal sites, or for the Richmond Beach Road/Aurora/175th Street route likely to be utilized for a haul route for the Richmond Beach site (site of 2 portals). C6-59

Recommended Mitigation Measure: Perform additional analysis based on the above comments and develop appropriate mitigation in conjunction with the City of Shoreline.

5. **Issue or Impact to be addressed:** The employee traffic impact analysis appears to have utilized an assumption concerning mode share transportation (transit, carpool, vanpool, walking, or bicycle). The County should identify if these assumptions were used to evaluate trips generated by construction workers. Construction workers typically do not utilize these alternate means of transportation, therefore, construction employees generate more trips which do not represent a "worst case scenario" as implied. C6-60

Recommended Mitigation Measures: Recalculate construction worker trips and bus construction workers to the site. If the parking area for the construction workers will be located in Shoreline, the City's approval must be obtained via a temporary use permit or equivalent measure to insure that impacts are not merely shifted to another area of the City.

C6-61

6. **Issue or Impact to be addressed:** Section 16.2.1.4 identifies that conflicts with other planned or programmed projects were evaluated and accessed in terms of schedule and physical impacts. In review of the Shoreline CIP, as well as other on-going City maintenance projects, the DEIS fails to reference projects the City of Shoreline has programmed through 2008.

Recommended Mitigation Measures: The traffic analysis should reflect the City's programmed projects. Some of these projects include:

- City Gateway Plans
- Rechannelization of Richmond Beach Road to three lane corridor

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Response to Comment C6-60

Please refer to the response to Comment C6-59 in this letter. A traffic management plan (TMP) addressing mitigation measures would be prepared for all agencies affected by construction and is included as a mitigation measure in the Final EIS. This plan would include time-of-day restrictions, necessary improvements to the roadway network, types of closures, pedestrian and bicycle detours, traffic routing/circulation management, and traffic control measures for safety on the affected roadways. These measures would be finalized by King County and would be coordinated with affected agencies during permitting. The TMP would include a plan for monitoring and restoration of streets to pre-existing conditions, access for emergency services, safe access for pedestrians and bicyclists, and would direct the movement of employees, equipment, and materials to reduce impacts along project traffic corridors. Please refer to Appendix 16-B, Transportation Impacts: Plant Sites and Conveyance, of the Final EIS for greater detail on construction impacts and mitigation measures.
The traffic analysis used an assumption concerning transportation mode share for construction employees that was based on typical commute patterns for construction projects. These patterns indicate that about one out of three vehicles would carry a second rider, which results in an average vehicle occupancy of 1.3. At primary portal sites, all parking would be provided onsite.
Due to the limited area that can be set aside for employee parking at the Unocal site, a remote offsite parking location with a dedicated shuttle service would be used to transport construction employees to and from the site. A detailed analysis of three possible remote offsite parking locations with shuttle bus service for Unocal site construction workers and the resulting impacts have been included in Chapter 16 of the Final EIS. None of the potential remote offsite parking sites were located within the City of Shoreline. The locations of the sites and access routes

between the Unocal site and these lots were identified. No existing park-and-ride locations were considered for construction worker parking. Please refer to Appendix 16-B for greater detail.

Response to Comment C6-61

The list of projects identified in your comment has been reviewed to assess potential impacts to those projects and/or benefits for Brightwater construction traffic. Please refer to Chapter 16, Impacts and Mitigation section, of the Final EIS for the list of projects considered and the cumulative impacts. King County is proposing to develop a traffic management plan (TMP) to address mitigation of traffic impacts during construction of the Brightwater Treatment Plant project. In that plan, King County would formally identify other major projects that would be under construction during the same time period. King County would coordinate construction traffic activities with these other projects to ensure reasonable traffic operations.

C6-61

- Interurban trail, from its southerly terminus (N. 145th Street) to its northerly terminus (N. 205th Street)
- Interurban trail crossing at 155th Street and Aurora Avenue
- Aurora Avenue Improvements ($30,000,000 project) between N. 145th and N. 165th Streets
- Aurora Avenue North Improvement between N. 165th Street and N. 205th Street
- 15th Avenue NE Improvements (between NE 146th Street and NE 196th Street)
- Signal installation at 15th Avenue NE and NE 165th Street
- North City Business District Improvements
- 175th Street sidewalks

C6-62

7. **Error or Inconsistency:** The planned and programmed regional projects referenced in Section 16.2.2.1, were included in the County's traffic analysis even though some are currently **unprogrammed** (PSRC). Since construction is slated to begin in 2004, these unprogrammed regional capacity improvements will not be complete during the construction phase. The traffic analysis should not assume that the projects would be completed.

C6-63

8. **Issue or Impact to be addressed:** Trip generation numbers shown in Table 16-16 appear inaccurate due to "worst case scenario" projections. Additionally, earthwork trucks for portal construction do not reflect tunneling in opposite directions (creates twice as many cubic yards of spoils). Nor do they appear to account for earthwork spoils generated from the portal construction itself. What does the County predict will be production rates for the portal construction? Did the County assume for tunnel construction production rates, that it was for an 8 hour work day, 12 work day, 24 work day, five or seven days a week, etc.?

   Recommended Mitigation Measures: Additional mitigation shall be warranted based on a revised / detailed traffic plan and City review of the schedule of construction activities (production hours, days and weeks) haul routes, final location of portal, etc.

C6-64

9. **Issue or Impact to be addressed:** The traffic analysis utilized a PSRC projection for population growth rate of 1% (page 16-40). The County should model growth rates projected in the next 2 to 10 years based on current adopted City plans.

   Recommended Mitigation Measures: Consult with the City of Shoreline to recalculate population growth.

10. **Issue or Impact to be addressed:** The County's estimate of the average daily traffic for each portal of 106 trips may not represent the "worst case" scenario as stated in the text. The worst case scenario may be 24 hour shifts with tunneling in both directions, and open-cutting method of the outfall section. It is unclear if the

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Response to Comment C6-62

The Final EIS background traffic condition includes the planned and programmed regional projects only if they are anticipated to be completed during the Brightwater construction period.

Response to Comment C6-63

Please refer to the response to Comment C6-59 in this letter. Construction work levels would be single (8-hour) or double (16-hour) shifts depending on the type of activity and work weeks are expected to be either 5 or 6 days depending on the affected jurisdiction's restrictions. Work schedules would be finalized during the local permitting process. Please refer to Appendix 3-G, Construction Approach and Schedule, of the Final EIS for greater detail on construction work activities and schedules. Analyses of construction traffic related to specific portal locations was based on specific production rate, trip generation, and work shift assumptions included in Appendix 16-B, Transportation Impacts: Plant Sites and Conveyance, of the Final EIS.

Response to Comment C6-64

The traffic analysis was prepared using the travel demand model developed by Puget Sound Regional Council (PSRC) in order to comprehensively reflect traffic growth trends resulting from regionally coordinated land use growth projections and planned transportation system development. Thus the 1 percent growth rate is for regional traffic growth, not population growth, but contained in that forecast are the official growth expectations of the various cities. PSRC's model included the short range or adopted plans from all jurisdictions within King, Pierce, and Snohomish counties.

It was assumed that construction workers would stay onsite during the entire work shift. Please refer to the response to Comment C6-63 in this letter. The traffic analyses for portals have been revised to account for specific construction activity levels at each portal. The results are summarized in Appendix

16-B, Transportation Impacts: Plant Sites and Conveyance, of the Final EIS.

C6-64

daily trips shown for workers in Table 16-16 account for lunch breaks, personal use, etc. It is unclear if the DEIS assumed that an employee never leaves the site during his work shift. It is unclear if the trip-generated numbers stated in the DEIS account for only an 8 hour shift or multiple shifts?

C6-65

11. **Issue or Impact to be addressed:** Section 16.2.4.1 (page 16-45) states *"lane closures could occur on roads...particularly in portal areas."* It further states *"construction could restrict access to homes or businesses,"* and *"temporary closures could affect the movement of police, fire, and emergency vehicles."* The mitigation measures proposed to deal with this impact are discussed in Section 16.3.2.1. However, these impacts as stated do not discuss the meaning of the word "restricted access" or the duration of "temporary closures."

Recommended Mitigation Measures: Other mitigation, which cannot be specifically identified at this time due to the generality of site specific locations, will be mandated. No traffic lane closures shall be allowed without the approval of the City of Shoreline Right of Way permit.

C6-66

12. **Issue or Impact to be addressed:** The report states (page 16-46) that the projected truck volume on Richmond Beach Road, in the primarily residential neighborhood area(s), will be nearly 10% of background traffic levels. This 10% figure needs to be reassessed. We do not concur with the County using the baseline year of 2010 (since construction will be complete), nor are they clear regarding the construction sequencing (multiple work crews at Point Wells site – outfall and tunnel construction), or on the number or hours of crews used in their production calculations. Even so, 10% is high truck traffic volume in a residential neighborhood. The "quality of life" in this neighborhood could be greatly effected, as will structural impacts to portions of this roadway. There are also areas where bicyclists and pedestrians share the roadway as no separate facilities are available for their use causing safety concerns with high truck traffic changes.

Recommended Mitigation Measures:

a. (Preferred method of reducing traffic) A reduction of significant truck trips would be realized with construction of a railroad spur or the use of barges at the Point Wells site, which would be utilized for the import and export of materials. The City requests that all equipment, materials, and excavated soil required to construct portal 19 and the outfall are transported by barge and/or rail.

b. (Alternative method to reduce traffic) The County should reconstruct and reopen Hebaslein Road through Woodway for construction traffic only, which would provide alternate access and additional emergency access. The additional traffic, particularly truck traffic will generate noise, odor (emissions) and safety concerns primarily through the residential neighborhoods of Richmond Beach.

c. Look at identified transportation projects in the area to be complete prior to the start of construction and indicate which are necessary for effective

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Response to Comment C6-65

During portal and site construction, access to roads adjacent to treatment plant and portal sites would be maintained. Access restrictions to homes and businesses refer to emergency vehicle access that would be maintained at all times during all construction phases of the Brightwater project. A traffic management plan (TMP) would be prepared with the City of Shoreline during the permitting process. The TMP would include measures for maintaining and coordinating emergency vehicle access and would include traffic control plans. The TMP would provide for continuous coordination with emergency service providers to address their needs. Please refer to Chapter 16 of the Final EIS for a more complete discussion of the TMP and other mitigation measures for construction traffic impacts. Please refer to the response to C6-57 in this letter.

Response to Comment C6-66

Please refer to the response to Comment C6-58 in this letter. The construction schedule would be from 2005 to 2009. Based on peak construction periods for portal and site construction, the detailed analyses of construction traffic were updated to represent the peak construction year of 2007. With respect to the truck percentage, the low volume nature of the roadway results in a high percentage value for a small addition of traffic.

Safe access and adequate non-motorized facilities would be provided for bicyclists and pedestrians during construction. Final traffic management plan approval would be coordinated with the City of Shoreline.

Re-opening Haberlein Road has been removed from consideration for the construction of Portal 19 because of the steep grades of the roadway. Additional detailed analyses of production rates, work shift assumptions, construction traffic routes and traffic impacts related to specific portal locations

have been included in Chapter 16 and Appendix 16-B, Transportation Impacts: Plant Sites and Conveyance, of the Final EIS.

Specific mitigation measures have been proposed for portal sites to reduce construction-related traffic impacts and are also described in Chapter 16. The level of mitigation measures was designed to address the specific impacts attributable to the Portal 19 construction using land based truck access. However, King County is evaluating the possibility of barge access to Portal 19 for transport of construction materials and earthwork spoils to reduce construction traffic through local neighborhoods. Construction of the Brightwater project would be coordinated with the cited programmed transportation projects.

C6-66

construction of this project. Potentially assist in funding any projects that may lag behind the schedule of this project.

13. **Issue or Impact to be addressed:** Roadways, stormwater facilities, and pedestrian access and safety may be severely impacted by the construction of Brightwater. These include, but are not limited to, Ballinger Way, 205th, 25th Avenue and Richmond Beach Road. Disruption to our community must be minimized, but many impacts will be impossible to fully mitigate in the short-term without improvement to the impacted City assets.

Recommended mitigation measures:

a. Roadways, pedestrian improvements, and stormwater improvements that are impacted by facility construction should be completely reconstructed to current standards in all areas where public right-of-ways are impacted by this project.
b. Pedestrian and stormwater facilities should be extended up to several blocks where needed to make appropriate transitions to existing facilities and ensure public safety.
c. Any reconstruction of 205th necessary for this project should consider the existing needs in this corridor to safely move people more efficiently and the existing problems with signal timing and transit viability in this corridor.
d. Any reconstruction of State Route 104 (including portions of 205th and Ballinger Way) necessary for this project should incorporate the unfunded pedestrian and HOV improvements planned by WSDOT for this corridor that have been identified by the Puget Sound Regional Council in Destination 2030.

C6-67

e. Construction and operation of the proposed outfall near Pt. Wells would increase the existing transportation burden on the City of Shoreline, which currently supplies the only road access to this site via Richmond Beach Road. All materials and equipment necessary for construction and the removal of excavated soil at the Pt. Wells outfall and portal 19 should be imported and exported to the site by barge or rail. Workers should be bused to the site to reduce traffic during construction. Consistent with the Shoreline Comprehensive Plan, the development of alternative road access to Point Wells should be included as project mitigation.
f. Connection of the planned Interurban Trail in Shoreline and Snohomish County with the Burke Gilman Trail in Lake Forest Park should be considered as a compensatory mitigation measure to address short-term impacts to pedestrian access and safety that cannot be fully mitigated during construction.
g. Opportunities for improving east-west pedestrian access along the western portion of the King-Snohomish County line should also be included as compensatory project mitigation.

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Response to Comment C6-67

The Brightwater conveyance system would be constructed by tunneling; surface impacts would be limited to portal sites only. Roadways such as Ballinger Way, 205th, 25th Avenue, and Richmond Beach Road; stormwater facilities; and pedestrian access on public right-of-way would not be disrupted.

- Roadways, pedestrian improvements, and stormwater improvements in the public rights-of-way would not be impacted by Brightwater portal construction footprints. As such, these facilities would not require reconstruction.
- Pedestrian and stormwater facilities would not be extended to connect to existing facilities because Brightwater portal construction footprints would not impact them.
- No reconstruction of 205th would be necessary as a result of the Brightwater project.
- No reconstruction of SR-104 (including portions of 205th and Ballinger Way) would be necessary as a result of the Brightwater project.
- The local roadways affected by construction traffic associated with Portal 19 and the outfall may require mitigation of pavement impacts and temporary provision of pedestrian and non-motorized facilities. All concrete would be transported by truck. Construction material delivery and removal of excavated soil have also been assumed to be by truck; however, King County is reviewing the feasibility of barging for these latter two activities. The level of mitigation measures was designed to address the specific impacts attributable to the portal site construction. All construction worker parking for Portal 19 would be provided onsite. The development of an alternative road access to Portal 19 would not be included as project mitigation. Re-opening Haberlein Road is not possible because of the steep grade of the roadway and extending 205th is not possible because of the surrounding topography.
- The traffic management plan (TMP) would include specific mitigation measures that would reduce traffic

impacts that are a direct result of the Brightwater Treatment Plant project only along construction access routes. These mitigation measures do not include compensatory mitigation such as connecting the Interurban and Burke Gilman Trails.

- The traffic management plan (TMP) would include specific mitigation measures that would reduce traffic impacts that are a direct result of the Brightwater Treatment Plant project only along construction access routes. These mitigation measures do not include compensatory mitigation such as improving pedestrian access along the King-Snohomish County line.

C6-68

CHAPTER 17 PUBLIC SERVICES AND UTILITIES:

The DEIS seems to adequately and accurately identify impacts to public services and utilities.

C6-69

APPENDIX B – CONSTRUCTION METHODS

1. **Issue or Impact to be addressed:** The report (page B-1) indicates that trucks used to remove the material from the site would vary in size: 10 CY single dump trucks, 15 CY semi dump trucks, and 20 CY combination truck and tractors. However, the types of trucks utilized will have various impacts regarding speed (upgrades), number, turning radii, ingress, egress, safety, etc. It is unclear which trucks (10, 15, or 20 CY) were used in the intersection analysis (Chapter 16) regarding de-acceleration time, and acceleration time?

   Recommended Mitigation Measure: Update analysis to reflect the above factors.

C6-70

3. **Issue or Impact to be addressed:** Portal activity will include temporary buildings or trailers, parking, storage, grout mixing equipment and materials, and heavy equipment, such as excavators, loaders, crane, trucks, tunnel boring machine, etc.

   Recommended Mitigation Measures: A "typical" site plan (including profile) should be provided for review and drawn to scale (need not include full depth of portal). The site plan should identify a typical site with temporary parking, fencing, temporary utilities, delivery, turn around area, lighting, storm facilities, ventilation ports, structures, equipment, dewatering ports (as required), etc., and other items pertinent to the site, such as staging areas, storage areas, construction office, etc. In addition, such permits as Temporary Use, Special Use, and/or Right-of-Way permits may be required by the City of Shoreline to further regulate and protect our community from negative impacts.

C6-71

3. **Issue or Impact to be addressed:** The DEIS discusses open excavation for the outfall both on the natural shoreline and offshore. What is the slope of the ground in these areas (minimum and maximum)? Is erosion a concern? In regards to outfall zone 7S, in-water trench construction could kill many of the clams and other invertebrate species contained in, and on the surface of, bottom sediments along the outfall route. Impacts would be greater in shallower waters where the abundance of various clam species is higher, although geoducks may occur at depths greater than 300 feet (page 88 of the DEIS). In addition, clams and invertebrates that are located outside of, but within the vicinity of, the trench may still be impacted from suspended sediments. Tunneling would have far less impact than trenching on shellfish and aquatic vegetation and is, therefore, the preferred construction method for this near-shore area.

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Response to Comment C6-68

Thank you for your comment.

Response to Comment C6-69

For determining the level-of-service during construction in the Final EIS, the unique characteristics of truck traffic were taken into account. For concrete, a standard mixing truck with a capacity of 10 cubic yards was assumed. For earthwork spoils, a truck-and-trailer combination with a capacity of 16 cubic yards was assumed. Please refer to the response to Comment C6-56 in this letter.

Response to Comment C6-70

Typical scaled site layouts for both the launching and recovery portals are included in the Final EIS. Refer to Chapter 3 of the Final EIS for a description of the project. Further detail will be determined during the preliminary and final design process after the publication of the Final EIS and the King County Executive has selected a system alternative for construction.

King County will work with applicable local jurisdictions to obtain required local construction and operating permits.

Response to Comment C6-71

Please refer to the response to the National Oceanic and Atmospheric Administration Fisheries (NOAA Fisheries), Comment F1-4.

C6-71 **Recommended Mitigation Measures:** All efforts should be made to utilize tunnel/bore construction methods and to avoid trench construction methods. Deep tunneling appears to offer many benefits over surface construction, including fewer impacts to critical areas, fewer overall environmental impacts, less disruption to the community, lower capital costs, and lower operation and maintenance costs.

C6-72 4. **Issue or Impact to be addressed:** Page B-11 indicates the outfall storage area may be used for mobilization of equipment and materials for up to 12 months prior to the scheduled construction period. What type and quantity of material does this temporary storage represent? At this time, this portal may be located in a City residential neighborhood and be cause for concern. Estimated quantities of rock armoring (up to 4,000 CY), pipe bedding (up to 2,000 CY), and pipe leveling course material (up to 1,500 CY) is referenced to be utilized for the outfall. This material could be imported via the railroad with the construction of a new railroad spur or barge.

Recommended Mitigation Measure: See #2 above.

C6-73 5. **Issue or Impact to be addressed:** Construction of the portals both short- and long-term may, and likely will, remove economic opportunities from both the citizens (businesses) and City as the property will be committed to public use, will not be subject to certain tax opportunities (B&O), will likely generate less property tax revenue, potentially require enhanced population density in other areas of the City (mandated by GMA) as this property is removed from current use.

Recommended Mitigation Measure: Work with the City, business owners/operators to determine the extent of the economic impacts. Compensate affected parties fairly.

C6-74 6. **Issue or Impact to be addressed:** The DEIS states that during construction contaminated soils may be encountered.

Recommended Mitigation Measures: Onsite treatment of contaminated soils shall not be allowed in Shoreline. In most areas of proposed construction, the interaction with residents creates safety concerns. In some cases, the best course of action for contaminated soils is to encase them onsite. However, that would have to be addressed on a site by site basis. Construction debris that is removed from portal or outfall constructions sites shall be covered during transit.

C6-75 7. **Issue or Impact to be addressed:** Methods for obtaining easements below properties where there will be tunneling and compensation details for said property owners have not been adequately addressed.

22

Response to Comment C6-72

Outfall construction in Zone 7S would be supported from a staging area located near the final land-based conveyance tunnel portal within Portal Siting Area 19. Prior to construction, this staging area could be utilized to store pipeline segments and backfill material. The material and equipment procurement process, including material ordering, manufacturing, and shipping, could last up to 12 months. The staging area would likely be used for storage for a period of 1 to 3 months before construction. Pipeline segments would likely be made of steel or high density polyethylene (HDPE). The final material selection will be made during predesign and final design after issuance of the Final EIS. Pipeline segments would be approximately 40 feet long and 60 inches in diameter. Pipeline segments could be delivered to the site by flatbed trucks or by rail. The number of segments stored at the staging area would depend on the length of the onshore outfall alignment (it is unlikely that pipeline segments for the in-water construction would be stored at the land-based staging area). The preferred outfall alignment within Zone 7S includes 1,000 feet of onshore pipeline; thus, it is anticipated that 25 segments would be required.

Backfill material for the onshore trench segment would include bedding material and granular fill. Bedding material consists of crushed rock. Granular fill is a mixture of medium and coarse grained sands. Backfill material would be selected to match the existing soils along the trench alignment. Volume of backfill materials required for trench construction would depend on the physical dimensions of the trench. Depth of the trench would be determined by the depth of the tunnel portal. Based on the current level of design, trench depth could be up to 30 feet deep at the tunnel portal and would gradually decrease in depth along the trench alignment to the shoreline. Trench length and width are anticipated to be 1,000 feet and 12 feet, respectively. Assuming a constant depth of 30 feet and the anticipated trench width and length, approximately 500 cubic yards (cy) of bedding material and

12,500 cy of granular fill material would be required. It is not likely that the entire volume of material calculated above would be stored at the staging area at one time. It is more likely that a portion of these materials would be onsite prior to construction, with the remaining backfill material delivered during construction. It is unlikely that backfill materials for in-water trench construction would be stored at the land-based staging area. King County is evaluating potential construction material delivery methods including truck, barge, and rail transportation. Selection of material delivery methods will be made after issuance of the Final EIS, and based upon planning considerations such as construction method selection, material source, and construction site access.

Response to Comment C6-73

The Draft EIS and Final EIS identify, for each element of the environment evaluated, probable significant adverse environmental impacts and reasonable mitigation measures. The EIS analyzes environmental impacts (WAC 197-11-448). City taxes, revenues, and potential economic impacts were not an element discussed in the Draft EIS and will not be addressed as part of the Final EIS as it is not an environmental impact. SEPA does require evaluation of land use issues, including “relationship to existing land use plans” (WAC 197-11-444(b)). This analysis is found in Chapter 11 of the Final EIS.

Response to Comment C6-74

It is correct that contaminated soils may be encountered. Thank you for providing guidance on handling contaminated soils in the City of Shoreline.

Response to Comment C6-75

This comment seeks information about property easements and valuation that is beyond the scope of an EIS. The EIS is designed to present environmental information and information relating to environmental impacts, not the legal or contractual information associated with property rights. For all necessary easements, King County will follow applicable state and federal laws and King County policies and procedures. Please refer to the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 and the King County Property Acquisition and Relocation Web site at http://dnr.metrokc.gov/wtd/row/acquisition.htm for more information.

C6-76

8. **Recommended Mitigation Measures General:**
   a. Shoreline should have their own construction monitoring personnel onsite. There are numerous ways to make this a positive contribution to the construction process, but they should be hired by and represent the City of Shoreline. This project could pay their salaries as part of the mitigation.
   b. As identified, some of the portals could create large construction footprints. At a minimum, during construction, the sites should be visually concealed from the travelling public to prevent distraction. This could be similar to the "plywood fencing" used at building construction sites in urban downtown settings.

C6-77

APPENDIX C – ENDANGERED SPECIES/ESSENTIAL HABITAT EVALUATION

1. **Error or Inconsistency:** Appendix C failed to identify the City of Shoreline as a source of water quality data. As part of our ambient monitoring the City does have data that can be reviewed for use in assessing impacts.

C6-78

2. **Issue or Impact to address:** For possible outfall construction using trenching methods, mitigation for temporary turbidity increases and possible temporary loss of eelgrass beds and clam beds is not specifically provided.

   Recommended Mitigation Measure: We strongly recommend utilizing tunneling to place the outfall in nearshore areas, which would avoid most of these impacts. However, contingency mitigation should be identified in advance in case tunneling proves to be infeasible. Possible mitigation measures include reseeding clam beds, replanting eelgrass, or possible freshwater salmonid habitat improvements. A nature preserve should be created to encourage the return of wildlife displaced from its habitat during construction.

C6-79

3. **Issue or Impact to address:** Mitigation for flow increases and resulting erosion in McAleer Creek and the Lyon Creek system due to dewatering discharges needs to be provided and the impacts more thoroughly addressed.

   Recommended Mitigation Measure: See Chapter 6 Surface Water comments.

C6-80

4. **Issue or Impact to address:** The evaluation does not appear to provide sufficient discussion of potential impacts on winter foraging bald eagles and great blue herons that may be affected by noise and other disturbances during construction, and makes only a vague reference to the potential for noise impacts in Table 5-6. In general, the discussion of impacts to listed wildlife species relies on avoidance of the disturbing activity to justify the low level of impact. This may be adequate for these species, but additional support for these statements should be included in the formal BE or BA. It is anticipated that USFWS and/or WDFW will apply appropriate timing restrictions during federal and state review of the project intended to protect bald eagles, great blue herons and the other wildlife species as needed.

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Response to Comment C6-76

Please refer to the response to Comment C6-5, in this letter, regarding mitigation suggestions.

Response to Comment C6-77

Water quality data collected by the City of Shoreline has been included in Appendix 6-A, Affected Environment: Surface Water, of the Final EIS.

Response to Comment C6-78

Potential mitigation for the construction and operation of the proposed Brightwater outfall are discussed in the Impact and Mitigation Summary Tables in Chapter 7, specifically, as well as in each of the individual chapters of the Final EIS.

Mitigation discussed includes the replanting of eelgrass beds and monetary compensation for loss of clam beds. Other mitigation measures under consideration include the improvement of degraded habitat outside of the impact areas, which could include freshwater salmonid habitat, and the installation of interpretive nature signs along the beaches.

The Preferred Alternative was selected, in part, to minimize impacts to eelgrass. Risks associated with tunneling are discussed in Appendix 3-F, Nearshore Alignment and Construction Methods Alternatives. The impacts associated with these risks exceed the impacts due to trenching.

Response to Comment C6-79

Since the publication of the Draft EIS, more detailed hydrogeologic analyses have been conducted, and the dewatering discharge rates have been reduced. Please refer to Appendix 6-F, Groundwater and Stormwater Management at the Candidate Portal Sites, for corrected dewatering discharge rates by portal and proposed dewatering discharge disposal options. Should dewatering

discharge rates exceed Washington State Department of Ecology's 10 percent guideline detailed stream studies would be conducted or alternative disposal methods would be used. Please refer also to the response to the City of Kenmore, Comment C3-88. Should impacts occur as a result of dewatering discharge, restoration, or enhancement would be conducted according to local regulations. King County would work with local jurisdictions to determine appropriate mitigation measures for project-related impacts.

Response to Comment C6-80

Impacts to winter foraging bald eagles and great blue herons due to noise were discussed in Chapter 7 of the Draft EIS. King County concurs that USFWS and/or WDFW timing restrictions will be applied if necessary to protect the nest sites of bald eagles, great blue herons, and other special status wildlife species. These impact analyses and mitigation measures are included in Chapter 7 of the Final EIS. King County intends to prepare a Biological Assessment for the project and will continue to work with NOAA Fisheries and USFWS.

CITY OF SHORELINE

SHORELINE CITY COUNCIL

Scott Jepsen
Mayor

Kevin Grossman
Deputy Mayor

John Chang

Rich Gustafson

Ron Hansen

Linda Montgomery

Robert Ransom

February 13, 2003

Anthony Poland
2433 NW 198th
Shoreline WA 98177-2419

Dear Mr. Poland:

Several weeks ago you raised a question regarding the City's response to the Brightwater Draft EIS. Specifically, you were asking about the City's comment that traffic analysis should reflect the City's programmed projects, which included "the rechannelization of Richmond Beach Road to a three-lane corridor". This reference is from a CIP project that was to be completed in 2002, but will now be completed in early 2003. This project is in our current CIP on page 101, and I have included a copy for your reference. It is a study project designed to analyze traffic options in the vicinity of Richmond Beach Road and Third Avenue NW. The scope of the study is to analyze three traffic options:

C6-81

1. Reduce the four-lane to a three-lane section between Dayton Avenue N and 8th Avenue NW
2. Create split phasing at the Richmond Beach Road and 3rd Avenue NW signal
3. Widen to five lanes with left turn lanes

There is no design or construction money for this work. It is intended as a study item only.

Our Brightwater response on this item was incomplete and a follow-up clarification note will be forwarded to the County staff responsible for analyzing draft EIS comments. I hope this answers your question, but please feel free to give me a call if you have any additional concerns or comments.

Sincerely,

Robert L. Olander
Deputy City Manager

Enclosure

C: Mayor and Council
Steve Burkett, City Manager
Paul Haines, Public Works Director
Jill Marilley, City Engineer

17544 Midvale Avenue North ◆ Shoreline, Washington 98133-4921
Telephone: (206) 546-1700 ◆ www.cityofshoreline.com

Response to Comment C6-81

The background traffic conditions have included all currently known funded projects that would affect the roadway network associated to the development of the proposed Brightwater project. Refer to Chapter 16 of the Final EIS for projects included in the analysis.

Orgkey: 2916102 **J.L.# ST102907** **Dept. Priority** **Total Project Budget** **$14,463**

Project Location: NE 145th St - NE 196th St

Project Scope: A revised scope would analyze 3 traffic options:
(1) reducing the 4 lane to a 3 lane section between Dayton Ave N and 8th Ave NW,
(2) split phasing the Richmond Beach Rd/3rd Ave signal (separate east and west),
(3) widening to 5 lanes with left turn lanes.
Traffic alternatives and findings would be reviewed and stakeholder (users, residents, businesses) input obtained. The analysis findings and stakeholder input would be used to select an improvement alternative.

Project Justification: The high amount of accidents at 3rd Ave with 2.59 collisions per million approach vehicles and left turn accidents and conflicts between Dayton and 8th Ave NW would be improved wiht a 3 lane section.

Phase	Prior Years' Expenditures	2002 Budget	2002 Projected	2003 Budget	2004 Budget	2005 Budget	2006 Budget	2007 Budget	2008 Budget	Total Project Cost
Project Expenditures:										
Planning	$2,790									$2,790
Pre-Design		$11,673	$11,673							$11,673
Design										
Real Estate Acquisition										
Construction										
Total Project Expenditures	**$2,790**	**$11,673**	**$11,673**							**$14,463**
Revenue Sources:										
Roads Capital Fund	$2,790	$11,673	$11,673							$14,463
Total Project Revenues	**$2,790**	**$11,673**	**$11,673**							**$14,463**
Impact on Operating Budget	**$0**	**$0**								**$0**

The operation and maintenance impact to the operating budget cannot be determined until this project is fully defined.

Project Time Line:		2002	2003	2004	2005	2006	2007	2008
		Q1 Q2 Q3 Q4	Q1 Q2 Q3 Q4	Q1 Q2 Q3 Q4	Q1 Q2 Q3 Q4	Q1 Q2 Q3 Q4	Q1 Q2 Q3 Q4	Q1 Q2 Q3 Q4
Planning								
Pre-Design								
Design								
Real Estate Acquisition								
Construction								

101

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C5
CITY OF WOODINVILLE

FINAL
ENVIRONMENTAL
IMPACT STATEMENT

Brightwater
Regional Wastewater
Treatment System

COMMENTS AND RESPONSES

January 21, 2003

RECEIVED
JAN 22 2003
ENVIRONMENTAL PLANNING DIVISION

The city of WOODINVILLE
"Citizens, business and local government; a community commitment to our future."

Don Theiler, Manager and SEPA Responsible Official
King County Wastewater Treatment Division
KSC- NR-0505
201 South Jackson Street
Seattle, WA 98104-3588

RE: Brightwater Wastewater Treatment Plant Draft Environmental Impact Statement comments

Dear Mr. Theiler:

The City of Woodinville hereby submits the following comments on the proposed Brightwater Regional Wastewater Treatment System Draft Environmental Impact Statement. Our comments begin with some general observations on the project and DEIS. Following these general comments, more specific comments are provided on each chapter of the DEIS. The City of Woodinville requests that these comments be addressed in the Final Environmental Impact Statement for this project.

Overall Comments

C5-1 The proposed Brightwater Route 9 treatment plant site is within one half mile of the City's northern corporate limits, and the area has much in common with the City. This close proximity of the site, the magnitude of the project, and its potential impacts means that the City must be included as part of the "affected" environment under SEPA rules as the project is likely to have "probable, significant adverse environmental impact" (WAC 197-11-712) on the City of Woodinville. Therefore, the FEIS should thoroughly address impacts of the project to the City of Woodinville in order to provide decision makers and the public with the balanced set of factors and information necessary to make sound decisions. As it stands, Woodinville is the most impacted incorporated jurisdiction, but it is rarely identified, and is not analyzed as an entity in the Route 9 entries of the DEIS. We are strongly dismayed by this.

C5-2 Additionally, the Brightwater treatment plan site is within the City of Woodinville's Urban Growth Area (UGA). Therefore, the area is presumed to eventually annex to the City. The Growth Management Act (GMA) recognizes the importance of interjurisdictional planning in UGA's by specifying that countywide planning polices contain: "policies for joint county and city planning within urban growth areas" (RCW 36.70A.210). The DEIS shows a marked absence of such interjurisdictional planning, in spite of several Snohomish County policies supporting these goals, as shown below:

JP-2: Encourage policies that allow accessible, effective and frequent inter-jurisdictional coordination relating to the consistency of comprehensive plans within a particular UGA.

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printed on recycled paper

Response to Comment C5-1

The City of Woodinville's concerns over impacts to the City are noted. The Draft EIS and Final EIS appropriately disclose potentially significant adverse impacts for various elements of the natural and built environment. The geographic scope of each of these evaluations varies based on the element of the environment and the nature of impacts. For example, evaluations of visual impacts are primarily limited to those areas that are within visual range of the treatment plant sites or portals, while traffic impacts extend to the wider geographic region that could be affected by the proposal. To the extent that probable significant adverse impacts extend into the City of Woodinville, they are disclosed in the Final EIS.

King County has been working with and will continue to work with the City of Woodinville as siting is completed and design work progresses to identify and address project impacts and permitting issues, if applicable, within the City's jurisdiction.

Response to Comment C5-2

The Regulatory Environment section of Chapter 11 in the Draft EIS and Final EIS provides the policy context under which Brightwater has been planned and coordinated. Also, please refer to the response to the Washington State Department of Natural Resources, Comment W3-6.

OD-9: Develop policies that encourage the orderly transition of unincorporated to incorporated areas.

ED-3: Encourage adoption of measures in local comprehensive plans, which help preserve designated industrial and commercial land base.

The GMA (RCW 36.70A.100) also requires that "the comprehensive plan of each county or city that is adopted pursuant to RCW 36.70A.040 shall be coordinated with, and consistent with, the adopted comprehensive plans of other counties or cities with which the county or city has, in part, common borders or related regional issues."

C5-3

The Brightwater DEIS fails to adequately address the above-cited coordination and consistency statutes and policies in its analysis of project impacts and mitigations, since it largely ignores these issues in relation to the City of Woodinville. The FEIS should therefore address more comprehensively this policy and regulatory guidance. Specifically, it should acknowledge that the City of Woodinville is a part of the "affected environment" under the State Environmental Policy Act, and address the environmental impacts and mitigations to the City. The FEIS should also address the need for a process for an orderly transition through annexation of the Urban Growth Area containing the Route 9 site to the City of Woodinville. As written, the FEIS shows a remarkable lack of interlocal coordination and planning called for by the GMA and King and Snohomish County planning policies. This should be corrected in the FEIS by a commitment to prepare an interlocal agreement between the City of Woodinville, Snohomish and King Counties for addressing the annexation issue, as well as determining impacts and mitigations to the City of Woodinville from the Brightwater project.

C5-4

The FEIS should also more thoroughly address the consistency of this proposed project with the adopted plans and policies of the City of Woodinville. These plans and regulations include the City of Woodinville Comprehensive Plan, Woodinville Municipal Code Chapter 21 (Land use and Zoning), Parks, Recreation and Open Space Plan, Capital Improvement Plan, Regional Arterial Network, Shoreline Master Program and Design Guidelines. In addition to the above referenced plans, for more than a year, the City of Woodinville has been in the process of developing a Storm Water Master Plan and a Downtown and Little Bear Creek Corridor Master Plan. The City of Woodinville has made substantial investments in environmental protection, including a major habitat assessment study, fish passage improvements and property acquisition along Little Bear Creek, and improvements to the storm water collection and treatment system. These investments are significant efforts by the City of Woodinville to enhance environmental resources and protect endangered species.

C5-5

C5-6

Meanwhile, the City of Woodinville is also doing significant growth management planning to meet the spirit and letter of the Growth Management Act. These efforts include steps to enhance its economic development, housing options and affordability, improve motorized and non-motorized transportation facilities and improve parks and open space. Recently, much of this effort has been focused through the City's Downtown and Little Bear Creek Master Plan. This planning process has been underway for over one year and has included extensive community involvement. This major subarea plan of our Comprehensive Plan is anticipated to be completed in 2003, and will be a long term "roadmap" for Woodinville's attainment of numerous

- 2 -

Response to Comment C5-3

Please refer to the response to the Washington State Department of Natural Resources, Comment W3-6 and the City of Woodinville, Comment C5-2.

Please refer to Chapter 11 and Appendix 11-A, Land Use Plans and Policies: Brightwater Regional Wastewater Treatment System, of the Final EIS for a discussion of the relevant policies and existing conditions relating to the Route 9 site and its location within the City of Woodinville Urban Growth Area (UGA). This includes a discussion of the City of Woodinville's annexation policies. A discussion of the consistency of Brightwater with adopted plans and policies of the City of Woodinville was included in Chapter 11, Section 11.2.2.1 Construction Impacts, Route 9 Site, in the Draft EIS and is included in Chapter 11 of the Final EIS. Additional information from the plans referenced has also been incorporated where relevant. Please note that many of these plans are also addressed in other chapters of the Final EIS. For example, Design Guidelines are described in Chapter 12, the Little Bear Creek Corridor Master Plan is addressed in Chapter 16, and the Parks, Recreation and Open Space Plan is discussed in Chapter 14.

The City of Woodinville's future land use map designates the portion of the Route 9 site within its UGA as Industrial. This is documented in the recent City of Woodinville 2002 Comprehensive Plan Update and EIS Addendum. Although Brightwater is classified as an Essential Public Facility, it also meets the intent of the Industrial zone designation: "to provide for the location and grouping of enterprises and activities involving manufacturing, assembly, fabrication, processing, bulk handling and storage, research facilities, warehousing and heavy trucking" (WMC 21.04.130). From a land use compatibility viewpoint, Brightwater is compatible with uses anticipated in an industrial zone.

Response to Comment C5-4

Please refer to response to Comment C5-3 of this letter. Also, please refer to Chapter 11 of the Final EIS for a discussion of coordination and mitigation that King County will consider in implementing the Brightwater project.

Response to Comment C5-5

Please refer to response to the City of Edmonds, Comment C9-5, and the response to Comment C5-3 of this letter. Chapter 11 and Appendix 11-A, Land Use Plans and Policies: Brightwater Regional Wastewater Treatment System, of the Final EIS include the additional relevant information and policies from the documents referenced in your comment.

Response to Comment C5-6

Please refer to responses to Comment C5-3 of this letter and the City of Edmonds, Comment C9-5. Chapter 11 and Appendix 11-A, Land Use Plans and Policies: Brightwater Regional Wastewater Treatment System, of the Final EIS include the additional relevant information and policies from the documents referenced.

Comprehensive Plan goals and policies, including the vision for a "compact, inviting downtown that is a good place to work, shop, live and recreate."

The above efforts represent substantial investments of time, staff resources and money from the Woodinville community and indicate the importance the City Council places on protecting and improving the quality of life in our City. The Brightwater Route 9 treatment plant could directly impact and threaten these investments in the future of the City of Woodinville. The DEIS fails to
C5-6 answer how the proposed project will impact these investments, and how those impacts will be mitigated. These potential impacts must be clearly identified and fully mitigated. Should the Route 9 site be selected, mitigation opportunities could include financial participation in the following:

- Salmon habitat restoration projects in the Little Bear Creek and Sammamish River.
- Creation of the Little Bear Creek Lineal Park from the Sammamish River to the Route 9 site and access to this trail from adjacent communities.
- Provision of identified projects in the City's Park, Recreation and Open Space Plan to ameliorate identified deficiencies in recreation facilities.
- Provision of pedestrian-oriented facilities identified in the City's Downtown and Little Bear
C5-7 Creek Master Plan.
- Transportation projects identified in the City's Transportation Improvement Plan to ameliorate key arterial choke points.
- Transit oriented housing development, to ameliorate the shortage of affordable housing and encourage transit ridership.
- Provision of a bond or other financial guarantee to ensure provision of an "activated carbon" system or other odor control method should the initial system fail to provide adequate odor control.

The above list is preliminary, and the City of Woodinville specifically requests the opportunity to meet with appropriate parties to discuss issues prior to preparation of the Final Environmental
C5-8 Impact Statement (FEIS), and, if the Route 9 site is selected, a "seat at the table" during permitting processes as well as any discussions regarding mitigations for this project.

City of Woodinville Tree Board Comments

The City of Woodinville Tree Board is a five-member board appointed by the City Council to advise them on matters affecting the Community Urban Forest. The purpose of the Tree Board is to promote the Community Urban Forest in order to uphold the City's environmental and economic health and preserve the northwest woodland character. The following comments are from the Tree Board.

C5-9 *"The Tree Board is concerned that the proposed Brightwater Wastewater Treatment Plan will adversely impact the City of Woodinville, in particular, how it relates to our current planning for the urban forest. Since the proposed site is within the City's Potential Annexation Area and will eventually be part of the City, the City's Community Urban Forestry Plan and associated tree regulations of Woodinville Municipal Code Sections 2.24 and 21.16 should be applied to this project. Changes of this magnitude that will alter the community and the environment to this degree should be subject to the*

-3-

Response to Comment C5-7

Please refer to the response to the City of Shoreline, Comment C6-5, regarding mitigation suggestions.

Response to Comment C5-8

King County has been working with and will continue to work with the City of Woodinville as siting is completed and design work progresses to identify and address project impacts and permitting issues, if applicable, within the City's jurisdiction.

Response to Comment C5-9

The City of Woodinville is currently not the regulatory and permitting agency for the Route 9 treatment plant site. In the event that Executive Sims selects the Route 9 site, King County will work with Snohomish County for project permitting and seek Woodinville's input during that process. If the City of Woodinville has regulatory authority over the design and permitting of the project in the future, then King County will apply for appropriate approvals and permits from the City of Woodinville. Please refer to the response to Comment C5-10 of this letter.

C5-9 *current regulations as well as the larger planning efforts that will impact the area for at least the next few generations. We respectfully request that the following comments be forwarded to the SEPA Official for consideration and inclusion into the City of Woodinville response to the Brightwater Draft Environmental Impact Statement:*

C5-10

1. Native Growth Tree Preservation
The proposed Brightwater area includes many native growth mature trees for which there are no substitutes once they are removed. The Development should be held to the same preservation and replacement standards as any development in the City of Woodinville, which is 30 tree-credits per acre. Not only is this important in maintaining the City's urban forest, a major goal of the City's Comprehensive Plan, but it will help mitigate other environment impacts such as air quality and surface water runoff. Planting within the proposed 100 foot wide buffers should consist primarily of native growth trees and plants.

2. Street Trees
A significant amount of trees should be included along the streets to provide a seamless transition into and out of the City. The street trees contribute to the overall urban forest enhancement necessary to relieve adverse development impacts to the City of Woodinville. The tree species should come from the City's Recommended Tree Species List.

3. Off-site Disturbed Areas
Tree planting should occur wherever there is disturbance along the pipelines and/or portals to help mitigate visual and water runoff impacts. These plantings should also be held to City tree and plant replacement standards.

C5-11

4. Stream Habitat Impact
A development of this magnitude will undoubtedly have a negative impact on the Little Bear Creek and any waterways that are connected to the creek. Protecting and enhancing the natural habitat and vegetation is paramount in order to alleviate these adverse impacts. The final storm-water treatment system proposed for the site should be in place and functioning before construction begins on the balance of the site.

C5-12

5. Aesthetic Impact
Brightwater facility will have a tremendous aesthetic impact to the Woodinville community that can be significantly mitigated by the planting of trees and plants. A significant forest type planting will help restore the canopy that characterizes our natural environment and maintains our quality of life in our community.

The Brightwater development must hold to our standards of, among other issues, urban forestry. In conjunction with these standards a monitoring program must be implemented. The program must include how the development will compensate the Woodinville community should there be a breech of those standards. The enforcement of these standards should be set up to be acted upon quickly by the appropriate jurisdiction".

- 4 -

Response to Comment C5-10

While the Route 9 site and portals are not under the jurisdiction of the City of Woodinville, King County has used the Woodinville design guidelines in development of the site and is committed to tree preservation and reforestation on the site. Please refer to Chapter 12 in the Final EIS for more discussion about proposed landscaping at both the treatment plant sites and candidate portal sites. The proposal for the Route 9 Treatment Plant includes reforestation of approximately 22 acres of the site, providing a substantial contribution to the conservation and restoration of "urban forest" in the region. Elsewhere on the site, native species will be used wherever feasible to help provide visual buffers between facilities and surrounding land uses, to provide buffers around sensitive areas, and to aesthetically enhance the visual amenities of the site. King County is also committed to re-vegetating areas of candidate portal sites that will not be used for maintenance and operation following construction.

Response to Comment C5-11

Before construction begins on any phase of the project, erosion and sediment control features, including sediment ponds, would be fully installed and functioning. Much of the stormwater conveyance system cannot be built until far along into the construction period. The treatment plant site preparation would occur over a 3-year period. During this relatively short period, the chance for a rare (10-year frequency or greater) storm event requiring full detention facilities is small. For this reason, runoff control efforts during construction would focus upon erosion and sediment control. Extensive efforts would be made to assure that runoff resulting from construction would be properly controlled and treated prior to release. As necessary, advanced treatment techniques could be used to assure that turbidity standards in the receiving streams would be met. Please refer to Appendix 6-E, Route 9 Site Runoff Effects on the Geomorphology of

Little Bear Creek. At the conclusion of construction, permanent treatment and detention facilities meeting Ecology and local requirements would be in place.

Response to Comment C5-12

Please refer to the response to Comment C5-10 of this letter. The landscaping plan for the site will include a monitoring component to ensure the survival of initial plantings. It is also anticipated that ongoing maintenance of the site will include management and oversight of vegetation, with replacement of plantings as necessary.

Fiscal Impacts Analysis Study

C5-13 Socio-economic impacts are not required to be addressed under SEPA, and they are not included in the Brightwater DEIS. However, the fiscal impact issues of the Brightwater project at the Route 9 site are of paramount importance to the City of Woodinville. As previously stated, this area is within the City's UGA and the area has been designated for future industrial and business park development. The proposed use of approximately 80 acres for the wastewater treatment plant will result in a number of lost employment opportunities in the vicinity and will have an expected loss in future revenue sources including property and retail sales taxes. The City of Woodinville retained an economic consulting firm to investigate the potential fiscal impacts relating to the Brightwater project. In order to perform an analysis, the use of the land in question for the treatment plant was compared with use of the same land for a hypothetical combined retail and office complex. The analysis also assumed annexation of the area to the City of Woodinville by the end of 2004. This entire report[1] is included with this letter. A summary of results of this study is included below.

C5-14

> *"The purpose of this study is to present results of an economic and fiscal impact analysis for two development scenarios within the Grace neighborhood. These two development scenarios are: (1) the proposed Brightwater wastewater treatment facility; and (2) a business park consisting of a retail center and office complex. Each of these development scenarios has potentially significant economic and fiscal implications for City of Woodinville, assuming the area is annexed by the city. In particular, the principal question for this study is as follows: what is the stream of revenues and economic effects of constructing and operating the Brightwater wastewater treatment facility in the Grace annexation area as compared with the planned business park scenario? Related, are there any stigma effects on property values associated with the proposed Brightwater wastewater treatment facility?*
>
> *This study is not a complete fiscal impact analysis. Rather, it is limited to considering only the revenue side; the other major component of a fiscal study—costs or expenditures—are not analyzed in this study. As such, major tax revenues generated from direct project-related activities, namely revenues generated from direct construction outlays, sales receipts (subject to the sales and use tax) from operations, real estate sales, additions to the assessed property base, and energy use are analyzed in this study. The revenue sources considered by the analysis consist of the property tax, sales and use tax, real estate excise tax, and utility tax (excise tax on electricity sales). In addition, the study presents findings on the economic effects—employment and earnings—of both of these development scenarios. Construction and subsequent operation of the Brightwater wastewater treatment facility and the business park will have employment and earnings effects by hiring new workers; in turn, these construction and operation activities will have "ripple" effects throughout the regional economy, and within the City of Woodinville.*

[1] A Comparative Analysis of Economic and Fiscal Impacts of Developing the Route 9 Commercial and Industrial Site within the Proposed Grace Annexation Area of the City of Woodinville. Huckell/Weinman Associates and Reed Hansen & Associates; January 2, 2003

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Response to Comment C5-13

Once a final decision is made on the location for the Brightwater System, King County will work directly with affected jurisdictions and permitting agencies on mitigation strategies and solutions to Brightwater construction and operational impacts. However, increases or decreases in business revenues, tax revenues, and property values are not environmental impacts as defined by SEPA (WAC 197-11) and are not addressed in the EIS.

Response to Comment C5-14

King County has received the fiscal impact analysis and will discuss the material with appropriate City of Woodinville officials.

Cost and economic impacts are not topics analyzed under SEPA and therefore are not addressed in the Brightwater EIS. SEPA contemplates that the general welfare, social, economic and other requirements and essential considerations of state policy will be taken into account in weighing and balancing alternatives and in making final decisions. The EIS is not required to evaluate and document all of the possible effects and considerations of a decision or to contain the balancing judgments that must ultimately be made by the decision makers" (WAC 197-11-448(1)).

However, once a final decision is made on the location for the Brightwater System, King County will work directly with affected jurisdictions and permitting agencies on mitigation strategies and solutions to Brightwater construction and operational impacts. As part of the overall decision process, King County is revising the cost estimates (dated November 2002) for the Brightwater alternatives. The revised estimates will be updated at the end of 2003 and will be available on request by contacting the Brightwater project at brightwater@metrokc.gov, or 206-684-6799, or toll-free 1-888-707-8571.fs

Brightwater Waste Water Treatment Plant

The plant is to be built over a six- to eight-year period, with operations scheduled to begin in 2010. The system capacity is initially designed for treatment of 34 million gallons per day (mgd); however, the system is capable of expanding to eventually accommodate 54 mgd. For purposes of this analysis, it is assumed that construction will commence in 2004 and be completed in 2009, with operations to begin in 2010.

The total construction cost for the plant is estimated at $474 million in 2002 dollars, based on King County Department of Natural Resources and Parks estimates. These cost outlays have in turn been distributed over the 2004-2010 timeframe of construction. Construction labor at the Brightwater WWTP site is estimated at a level of 350 workers during the peak construction period. Truck drivers would add an additional 60 – 70 workers. Combined, the total peak construction workforce is estimated at 410 – 420 workers.

C5-15

Operation of the Brightwater WWTP is assumed to formally commence in 2010, although operational personnel are expected to be employed at the plant a year prior during the testing and startup period following construction. Operation costs (i.e., operations and maintenance) have been estimated at $274 million over a 20-year period, based on a present value calculation using a discount rate of 3 percent. It is anticipated that the operations workforce will require 60 full-time-equivalent (FTE) workers.

Both construction and operation of the Brightwater wastewater treatment facility will create economic ripple effects within the region. During the construction phase, total (direct and indirect) employment and earnings will peak during 2008, amounting to 970 workers with earnings of $11.8 million. Operations phase employment and earnings are projected at 60 workers and $5.3 million earnings in 2010, the steady-state year.[2] With associated activity from this Brightwater WWTP operations phase, a total workforce (direct and indirect) is estimated at 113 workers for the first year of full operation.

With annexation of the proposed site for the Brightwater WWTP, the City of Woodinville would be expected to realize substantial revenue flows directly from the construction phase but only modest revenues once Brightwater WWTP becomes fully operational. Actual collections benefiting the City would occur upon annexing the Grace neighborhood area, which is anticipated by the end of 2004. Sales and use tax collections represent the major component of direct revenue contributions to the City following annexation of the area under consideration. The property tax is not applicable, as the project would be publicly-owned. The real estate excise tax, which is levied at 0.5 percent on property sales within the City is also not applicable, as sales transactions are assumed to be completed prior to 2005. Finally, the utility tax on electricity, levied at 2.0 percent of charges, is estimated to generate modest revenues during operations, some $33 thousand per annum. Over the projection period—2005 through 2012—total revenues attributable directly to the project are estimated at $3.83 million in 2002 dollars.

C5-16

[2] Steady-state refers to the period of full-operation with no expected expansion or change; economic and revenue effects are assumed to remain constant over this time period.

Response to Comment C5-15

King County has received the fiscal impact analysis and will discuss the material with pertinent City of Woodinville officials.

Response to Comment C5-16

King County has received the fiscal impact analysis and will discuss the material with pertinent City of Woodinville officials.

Grace Annexation Planned Business Park

The area designated for development of the Brightwater WWTP is presumed to allow for industrial and business park development under City of Woodinville zoning. For this study, development is predicated on availability of an 80-acre site (buildable area) with assumptions regarding the type of business uses and mix of structures. It is assumed that two-thirds of the site would be developed as retail with the remaining one-third devoted to office buildings. The retail center would consist of a power shopping center, two "big box" mass merchandising stores, and four fast food restaurants. The retail area would involve development of 25 percent of the designated land area for structures with the remaining area used for parking and buffers. A total of 580,000 square feet of retail space would be developed under this scenario. The office complex would consist of a total area of 1,150,000 square feet. It is important to note that the business park development scenario is hypothetical; no market analysis has been performed as part of this study to validate the assumptions regarding projected development and absorption of retail and office space at the site.

The total construction cost for the planned Business Park is estimated at $274 million in 2002 dollars. Construction would be carried out over a 7-year period. The figures for construction do not include land costs, which are estimated at $69.4 million, similar to the assumption used for the Brightwater WWTP analysis. Land purchases at the site are assumed to occur over a 3-year period, beginning in 2003. The peak year construction workforce is estimated at 255 workers, or about half of the workforce estimated for the Brightwater WWTP.

C5-17 *Business park operations are assumed to commence as construction projects are completed, beginning in 2005. The operations workforce for the retail sales center is expected to employ 2,060 workers at full-development; employment at the office complex is estimated at 3,485 workers, based on the floor area-to-employee ratios. These direct employment estimates [totaling 5,545 workers (that is, 2,060 + 3,485 = 5,545)] are on a full-time-equivalent basis. Sales subject to the sales and use tax are estimated at $159.3 million in the steady-state year. At full build-out, the business park is expected to have an assessed valuation of $307.7 million.*

The analysis of economic impacts related to development of a planned business park is on the employment and earnings generated during construction and operations of the facility. Total construction phase employment and earnings during the peak construction year, 2005, amount to 514 workers (composed of 255 direct workers and 259 indirect workers) and $22.0 million, respectively. Operations phase total employment and earnings are projected at 8,621 workers (composed of 5,545 direct workers and 3,076 indirect workers) and $352.3 million earnings in 2010, the steady-state year.

With annexation by the City of the proposed site, the City of Woodinville would be expected to realize substantial revenue flows directly from both construction and operation of the planned business park. The actual tax collections benefiting the City would occur upon annexing the subject area, which is anticipated by the end of 2004. A total of $9.5 million in collections from sales and use tax are projected between 2005 and 2010. The property tax is also a major revenue source from the business park project, with projected revenues over the 2005 to 2010 period amounting to $2.5 million. Over the projection period, 2005 through 2012, total revenues attributable directly to the project are estimated at $14.64 million.

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Response to Comment C5-17

King County has received the fiscal impact analysis and will discuss the material with pertinent City of Woodinville officials.

C5-18 *The economic and fiscal differences associated with both development scenarios are noteworthy. Total peak construction employment for the Brightwater WWTP development is estimated at 970 workers in year 2008; for the business park the comparable figure is 514 workers in year 2005, for a difference of 415 workers, in favor of the Brightwater WWTP. During operations, however, the total employment results are reversed in favor of the business park development. Total steady-state operations employment, which occurs in year 2010, is estimated at 113 workers under the Brightwater WWTP scenario compared to 8,621 worker under the business park scenario, for a difference of 8,508 workers. Revenue impacts on the City of Woodinville also differ substantially between the two development scenarios. Under the Brightwater WWTP scenario, the City is projected to receive $3.7 million over the projection period 2005 through 2010; however, the on-going revenue collections during the steady-state period (2011-2030) are only $33,000 per year. The comparable figures for the planned business park are $12.4 million over the 6-year projection horizon (2005-2010) and $2.1 million annually for the steady-state period (2011-2030), a difference of $8.8 million during the projection period and $1.98 million per annum during steady-state, in favor of the business park scenario.*

Clearly, the City of Woodinville stands to benefit from increased revenue flows under both scenarios, but at a dramatically greater magnitude assuming the business park is developed. The on-going revenue flow under the business park scenario is over 50 times as great as the Brightwater WWTP scenario.

C5-19 *If the Brightwater WWTP were sited in the proposed annexation area of Woodinville, what would be the potential impacts on nearby residential property values? Although more research is required to provide a more definitive answer, it is not expected that the siting of the wastewater treatment facility would have a negative impact on nearby residential property values, assuming that odor control is successful and odor is not detectable off-site, as claimed in the DEIS."*

DEIS Chapter Comments

The following are general and specific comments on particular chapters of the DEIS.

Chapter 1 Summary

C5-20 General Comment:

Chapter 1 presents a general overview of the project and regulatory processes for the project and sets the tone of vagueness regarding project details that follows in subsequent chapters. It is evident that the DEIS lacks the project design specificity to allow informed and realistic predictions on impacts and mitigations. This lack of specificity should be addressed by a supplemental phase of environmental review when project design data is more defined. The DEIS alludes to such a possible additional review on page 1-19, as follows:

"As the Brightwater system that is ultimately selected moves forward into design, further investigations of environmental conditions may present new or additional information that the project engineers will incorporate into the design of facilities. Any new information that alters

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Response to Comment C5-18

King County has received the fiscal impact analysis and will discuss the material with pertinent City of Woodinville officials.

Response to Comment C5-19

King County has received the fiscal impact analysis and will discuss the material with pertinent City of Woodinville officials.

Response to Comment C5-20

Additional analysis that has been conducted relating to probable significant adverse impacts that will not be mitigated or regulated into non-significance is included as part of the Final EIS analysis. There is no practical or legal need under SEPA to include this work in the form of a Supplemental Draft EIS. Furthermore, there is no SEPA case law calling for such action. Moreover, it is the principal task of the Final EIS to respond to questions and comments raised in comments on the Draft EIS and, if appropriate, to revise alternatives, analyze the probable significant adverse environmental impacts, and discuss reasonable mitigation measures. This Final EIS both addresses each question and comment provided on the Draft EIS and contains revised analysis in many areas, taking into account the new information available through the ongoing review by King County, as well as the information drawn from comments and additional studies conducted since issuance of the Draft EIS. This type of work is what SEPA contemplates is the function of a Final EIS.

the project description or creates new or different probable significant adverse environmental impacts that are beyond the range of those evaluated in the EIS will be addressed to determine its significance, and if necessary, appropriate environmental review will occur at that time."

Due to the vagueness of the existing data in the DEIS, we feel that this additional review is necessary and the FEIS should either provide the additional project detail and environmental review, or clearly indicate when this information will be made available for public review. A
C5-20 suggested form this could take would be the preparation of a Supplemental Environmental Impacts Statement (SEIS).

***Page 1-8, Section 1.6** – This section describes the "No Action Alternative", and refers the reader to the 1998 FEIS for the Regional Wastewater Services Plan (RWSP) for an evaluation of the impacts of "other RWSP programs and projects" under the no action alternative.*

Comment: Within the Brightwater DEIS, the "no action" alternative is given especially vague and general treatment. Although the DEIS adopts the RWSP FEIS by reference, we feel the "no
C5-21 action" alternative should be given more prominence in the FEIS, and essential comparison information from the RWSP FEIS should be included to allow for comparison of this alternative versus the "action alternatives". In addition, the issue of Infiltration and Inflow (I&I) appears to be highly relevant to the discussion of the need for an additional wastewater treatment plant. The issues surrounding the topic of I&I should be thoroughly evaluated to present a truly informed picture of regional wastewater management needs. For instance, the cost and environmental tradeoffs of improved I&I control versus the other various "action" alternatives should be analyzed in the FEIS to allow comparison of this alternative with others.

***Page 1-13, Section 1.9.3** - This section refers to property owned by the Northshore School District on which the District has proposed location of a transportation support facility (bus*
C5-22 *barn). The DEIS identifies this site for a "potential location for stormwater and wetland mitigation for the Route 9 site."*

Comment: The FEIS should state clearly that if the Route 9 site were selected, the property in question would not be used for the bus barn facility.

***Page 1-14, Section 1.9.5** - This section addresses a Habitat Conservation Plan (HCP). King County (KC) proposes to address only those activities that are related to the construction and operation of the wastewater treatment plant, outfall, and water reuse plant in the HCP.*

C5-23 Comment: The HCP should also include activities related to project mitigation. If the Route 9 site is chosen, there may be mitigation projects on Little Bear Creek, and other Sammamish River tributaries. When will these mitigations be more clearly defined and available for public review? Additional information about proposed mitigation measures is needed before it will be possible to evaluate whether there might be inconsistencies between the proposed mitigation and the HCP.

C5-24 **Chapter 2 Background**

***Page 2-23, Section 2.4.3.3** -This section lists Snohomish County's Essential Public Facility (EPF) siting process factors. Factor #2 states: "the EPF should demonstrate its relationship to local, regional and state plans, and should be consistent with the adopted plans of the host*

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Response to Comment C5-21

The Final EIS addresses the No Action Alternative in additional detail. This information is provided in the pertinent impacts chapters, and also in Chapters 1 through 3 of the Final EIS. In addition, Chapter 1 has been changed to include additional discussion of I/I control and its relationship to the need for additional capacity in the King County wastewater system. Please refer to Appendix 3-J, Evaluation of the No Action Alternative, for additional detail.

Response to Comment C5-22

On April 21, 2003, the Northshore School District withdrew their Docketing request for a rezone and comprehensive plan amendment indicating that their property had been sold to King County. The District has no further intent to develop the site.

Response to Comment C5-23

King County's Wastewater Treatment Division (WTD) has decided that no aspect of the Brightwater System will be covered by the Habitat Conservation Plan (HCP). Instead, Brightwater will comply with the Endangered Species Act through "consultation" under ESA § 7.

Any mitigation proposed as part of the Brightwater siting effort is specific to that project and separate from the HCP process and will be more closely defined and available for public review as the Brightwater project moves forward. However, the HCP staff intends to work closely with the Brightwater siting team and other interested parties to take advantage of any common projects. The WTD HCP is a programmatic plan to address the potential for WTD activities associated with implementing the Regional Wastewater Services Plan to impact listed species over the next 40 years throughout the service area. The HCP will cover activities associated with the operation and

maintenance of other WTD-owned plants, lines, and pump stations and the discharge of secondary effluent into marine waters from WTD-owned wastewater facilities. Any mitigation proposed as part of the HCP will be based on those broad categories of actions, rather than on any specific projects.

Response to Comment C5-24

Please refer to the responses to Comment C5-3 of this letter and the City of Edmonds, Comment C9-5, regarding the relationship of Brightwater to the City of Woodinville's adopted plans.

The King County Growth Management Planning Council is responsible for establishing population and employment growth targets for its cities. Current land capacity data in the King County *Buildable Lands Report* (2002) indicate that the City of Woodinville has adequate residential and employment capacity within its UGA to accommodate the remaining portion of the adopted 2012 population and employment growth targets. Data on employment change for the years 1995 to 2000 indicate that Woodinville has achieved about 240 percent of its current 20-year target of 1,940 jobs. The City has exceeded its target by 2,728 jobs and has capacity for 2,466 additional jobs (King County, 2002). About 1,614 of these jobs would be provided in the Industrial zone. Of this total, 332 jobs (21 percent) are allocated to the Grace Neighborhood. These findings are consistent with the Carrying Capacity Analysis that was conducted as part of the City of Woodinville's 2002 Comprehensive Plan Update (December 2002).

The City of Woodinville was contacted to obtain updated information and clarification regarding potential annexation of the Grace Neighborhood. The City indicates that as part of a subarea plan for this area, the City of Woodinville is pursuing a joint planning agreement with Snohomish County to include the Grace Neighborhood within the City of Woodinville. This would occur through an interlocal agreement for joint planning and the annexation process. At this time, there is no interlocal agreement in place. The EIS text has been revised to reflect this information.

The City of Woodinville future land use map designates the portion of the Route 9 site within its UGA as Industrial. This is documented in the recent City of Woodinville 2002 Comprehensive Plan Update and EIS Addendum. Woodinville currently has about 67 acres of industrial zoned land within its UGA that is either vacant or redevelopable; 12 of these acres are within the Grace Neighborhood. About 17 acres would be required to reach the remaining employment allocation in the industrial zone.

Assuming the Grace Neighborhood is annexed into the City of Woodinville, development of Brightwater at the Route 9 site would remove 72 acres of industrial zoned land supply from the City's UGA. This would displace existing uses at the site as well as preclude the development of other industrial or office park uses as envisioned by the City. However, Brightwater would not preclude the City from meeting its employment growth targets as the City has excess employment capacity beyond its 2012 planning horizon. Brightwater would provide between 47 and 52 new jobs, which to a small degree would help to offset the impact from the displacement of businesses that currently occupy the site.

Although Brightwater is classified as an Essential Public Facility, it also meets the intent of the industrial zone: "to provide for the location and grouping of enterprises and activities involving manufacturing, assembly, fabrication, processing, bulk handling and storage, research facilities, warehousing and heavy trucking" (WMC 21.04.130). From a land use compatibility viewpoint, Brightwater would be compatible with uses anticipated in an industrial zone.

SEPA does not require the evaluation of economic impacts resulting from a proposed action. "SEPA contemplates that the general welfare, social, economic and other requirements and essential considerations of state policy will be taken into account in weighting and balancing alternatives and in making final decisions. The EIS is not required to evaluate and document all of the possible effects and considerations of a decision or to contain the balancing judgments that must ultimately be made by the decision makers (WAC 197-11-448(1))." King County will continue to work with the City of Woodinville to mitigate potential impacts to their City, including economic impacts.

community." The EIS states the Brightwater facility carries out various state mandates for adequate wastewater treatment facilities.

Comment: The Brightwater project is within the Urban Growth Area of Woodinville. To be consistent with the GMA, and because the City plans to annex this area either before or after permits are processed for Brightwater, the EIS should address how Brightwater will be consistent with the City of Woodinville's adopted plans. The DEIS states only that a wastewater treatment plant would be permitted in Woodinville's industrial zone, (which is the pre-annexation zoning assigned to this area by the City of Woodinville). The City's vision for this area is for a continuation of industrial zoning with perhaps an "office park" overlay in the project vicinity to encourage a variety of commercial development that would add to the City's tax base and provide employment opportunities. The treatment plant in this area would permanently remove an estimated 84 acres from commercial use and be inconsistent with the City of Woodinville's vision for this area. What will be the impact of lost jobs and tax base to the City of Woodinville? How will it be mitigated? The City would propose that part of this impact be mitigated by expanding the City's urban growth area either along the Sammamish River to the south of NE 171st Street or further north of the existing UGA boundary. C5-24

Chapter 3 Description and Comparison of Alternatives

Figure 3-3 *- The Conceptual Layout shows a discharge pipe from the Route 9 storm water ponds under Route 9 into Little Bear Creek. For better habitat quality in this drainage, it is recommended that a "box culvert" or similar crossing be constructed to provide more open channel habitat.* C5-25

Comment: We recommend construction of a bridge-type crossing under Route 9 that would provide an open channel habitat connection to Little Bear Creek.

Page 3-2, Section 3.2.1 *– The DEIS states that the Route 9 site would have the capacity to give secondary treatment to 36 mgd by 2010, with expansion to 54 mgd by 2040. These capacities are for average wet weather flows. The plant must also be able to accommodate a peak flow of 170 mgd.*

C5-26 Comment: Additional information is necessary to answer the following questions: Is the 170 mgd capacity due to the system being designed for combined sewer and storm water flows, or is it the result of the need to accommodate inflow and infiltration (I&I)? What level of treatment would the excess peak flows receive? If the excess peak flows are the result of I & I, what steps have been taken to reduce the need to accommodate these flows and what are the cost tradeoffs of reducing I&I as compared with sizing the system for the 170 mgd?

C5-27 ***Page 3-8, Section 3.3.1.1*** *- A portion of the Route 9 site is situated over the southern boundary of the Cross Valley Sole Source Aquifer…outside of the wellhead protection area and in the discharge zone.*

Comment: The Cross Valley Water District presently serves a small portion of the Woodinville area, and we believe it is the primary source for the Grace neighborhood. The FEIS should more clearly and fully address impacts to this water supply and consequences for water users and the environment.

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Response to Comment C5-25

There are a number of culverts along the west side of the project site that convey runoff under SR-9. Where feasible, these existing culverts would be used to discharge treated stormwater under SR-9. During design, each culvert would be evaluated for its capacity to handle post-project flows. Part of that evaluation would be to assess the capability of the culvert to meet the fish passage criteria shown in Washington State Department of Fish and Wildlife's *Design of Road Culverts for Fish Passage* (2002). Where current fish passage criteria are not met, the Brightwater project team would coordinate with the Washington State Department of Transportation regarding the need to reconstruct the culvert or upgrade to a bridge crossing.

Response to Comment C5-26

The 170-mgd capacity is to accommodate peak flows due to infiltration and inflow (I/I). There would be no combined sewer and stormwater flows to the Brightwater Treatment Plant. The excess flows would be treated using an alternative process, such as ballasted sedimentation. This stream would be blended with the secondary effluent (treated in the membrane tanks) and the combined flow would be disinfected prior to discharge. This split flow membrane bioreator (MBR) process would produce a better effluent quality than standard secondary treatment with a conventional activated sludge system. Reducing the I/I into the Brightwater System is not cost effective when compared to sizing the treatment plant for peak flows during wet weather.

Response to Comment C5-27

Please refer to the responses to the Washington State Department of Ecology, Comments W5-15 and W5-43, and Appendix 6-B, Geology and Groundwater, for a detailed discussion of this issue.

Page 3-36, Table 3-9 *- "It is possible that leaks from treatment plants or influent pipes entering the site could enter the shallow groundwater system."*

Comment: Same as previous comment above.

Page 3-37, Table 3-9 *- "Voids along the tunnel bore could serve as a zone of preferential flow, providing a drain that might deplete the aquifer."*

Comment: Same as previous comment above.

Page 3-38, Table 3-9 *- "Any contaminants that may reach the shallow, unconfined aquifer should tend to flow horizontally toward the discharge zone of the shallow aquifer in Little Bear Creek."*

C5-27 Comment: Same as previous comment above.

Page 3-10, Table 3-9 *- "A treatment plant at the Route 9 site would use either a sodium hypochlorite or UV light for disinfection of secondary effluent."*

C5-28 Comment: When would this decision be made? Additional information is necessary to evaluate the comparative impacts of these two methods of disinfection. Would the sodium hypochlorite have an odor detectable off-site? Would sodium hypochlorite be hazardous to the environment if spilled? What measures are proposed to control potential impacts? These issues need to be thoroughly addressed in the FEIS.

Page 3-31, Section 3.8 *- "Emergency wastewater overflows could potentially occur if storm-influenced flows were to exceed the treatment plant or conveyance system capacities and multiple equipment and power failures were to occur."*

C5-29 Comment: Additional information is needed to answer to the following questions: Does this mean that storm water collection systems are tied into the wastewater system? How do "storm-influenced" flows get into the wastewater treatment system and is this preferred over separate systems? Is this preferred over aggressive I&I options as described in the RWTP? Also, what would be the impact on Little Bear Creek from the impact of overflows or plant breakdown at the Route 9 treatment plant?

Chapter 4 Earth and Groundwater

C5-30 General comment:

As stated in the general comments of this letter, the City of Woodinville and Snohomish County are making substantial investments in improving Little Bear Creek water and habitat quality. In April 2002, an Interlocal Agreement was signed between the City of Woodinville and Snohomish County for planning, funding, and implementation of various activities and projects

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Response to Comment C5-28

The project would use sodium hypochlorite for disinfection of the effluent for Puget Sound discharge from the Route 9 site. The sodium hypochlorite would be injected into the effluent, and the effluent tunnel would serve as the chlorine contact chamber. There would be no detectable odor offsite from the sodium hypochlorite as it would not have the opportunity to escape to the atmosphere. The Uniform Fire Code requires that a Hazardous Materials Management Plan (HMMP) be prepared for potentially hazardous materials such as sodium hypochlorite. This is further described in Chapter 9 of the Final EIS. Ultraviolet light would be used for disinfection of reclaimed water. More detail on the evaluation of disinfection alternatives can be found in Appendix 3-K, Treatment Plant Disinfection Alternatives, of the Final EIS.

Response to Comment C5-29

There will be no combined sewer and stormwater flows to the Brightwater Treatment Plant. Storm-induced flows enter the sanitary sewer system through infiltration and inflow (I/I). Reducing the I/I into the Brightwater System is extremely expensive and not cost effective when compared to sizing the treatment plant for peak flows during wet weather. There would be no impact to Little Bear Creek from overflows or plant breakdown because any emergency flow discharge would occur from the safety relief point at Kenmore at the lower Sammamish River just before the river discharges into Lake Washington. Emergency releases would be rare, as described in Appendix 3-F, Nearshore Alignment and Construction Methods Alternatives, of the Final EIS.

Response to Comment C5-30

Once a final decision is made on the location for the Brightwater System, King County will work directly with affected jurisdictions and permitting agencies on strategies to mitigate impacts of Brightwater construction and operation.

Updated and expanded information on impacts and mitigation measures associated with Brightwater construction and operation can be found in Chapters 4 through 17 of the Final EIS. This information is summarized in Chapter 3 of the Final EIS.

in the Little Bear Creek Watershed. The FEIS should reference this interlocal as documenting the need for including the City of Woodinville in any analysis of potential impacts and in determining adequate mitigation strategies related to any activities in Snohomish County that could affect the Little Bear Creek Watershed. The potential impact of upstream activities is of great concern to the City of Woodinville as it relates to Endangered Species Act strategies and investments in Little Bear Creek. The potential impacts to groundwater and the collection, routing and treatment of surface water, as well as any potential for accidental spills from the Route 9 site need to be thoroughly evaluated and mitigated. C5-30

Also, additional information needs to be provided to answer the following questions regarding the impact upon the sole source aquifer: How many people are currently served by this aquifer? How many people could be served by it if it remains uncontaminated and otherwise unthreatened? How could spills at the Brightwater site affect this aquifer? How could construction of the plants and conveyance system affect this aquifer? How does the aquifer relate to other bodies of water in the area, including but not limited to Little Bear Creek? C5-31

Page 4-16, Section 4.1.3.2 – *The DEIS states there is a potential liquefaction area within the Route 9 site area; however, no test borings were drilled in the area.* C5-32

Comment: Test borings should be done and analyzed and the FEIS should address the viability of this potential hazard in more informed detail.

Page 4-17, Section 4.1.3.2 – *The DEIS references numerous water wells on Figure 4-7.* C5-33

Comment: The text mentions only 16 wells "on or adjacent to the (Route 9) site" that were reviewed in more detail. The FEIS should identify the location of these wells and address the potential of down gradient contamination of other identified wells as shown on Figure 4-7.

Page 4-18, Section 4.1.3.2, paragraph 3 - *"The City of Woodinville installed two water supply wells in 1994 but did not obtain a water right to use them for municipal supply. The two wells are located approximately 2 miles southeast (cross-gradient) of the site, and the city maintains them for emergency use only."* C5-34

Comment: The City is unaware of these wells. The FEIS should include the source for this statement, including contacting the Woodinville Water District, a separate public agency.

Page 4-17 Section 4.1.3.2 *- "The Cross Valley Water District supplies water to residents, businesses, and pubic schools in the vicinity of the Route 9 site, and approximately 89 percent of the water is from groundwater sources. The CVWD has 10 water supply wells that serve 4,430 connections."* C5-35

Comment: What are the concerns of the CVWD? Do they feel the potential impacts of the Route 9 site are acceptable? CVWD comments should be included and addressed in the FEIS.

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Response to Comment C5-31

Cross Valley Water District (CVWD) data indicate that the CVWD's 10 water supply wells serve about 4,430 connections. The total service capacity of this aquifer is not known, and the determination of the capacity is beyond the scope of this EIS. CVWD chooses to supply a portion of its water from surface water sources, so groundwater is not its only water supply. It is extremely unlikely that spills from the Brightwater Treatment Plant would affect the CVWD water supply aquifer because the treatment plant is not only down-gradient, but also separated from the water supply aquifer by a near-surface, shallow, unconfined aquifer and a low permeability layer before the aquifer that appears to be connected to the up-gradient Cross Valley Aquifer is reached. Appendix 6-B, Geology and Groundwater, of the Final EIS provides a summary of the inter-relations between area water bodies, as well as groundwater impact analyses conducted for the conveyance lines and treatment plant locations for both the construction and operations periods of the Brightwater System. As shown by these analyses, no significant adverse impacts to groundwater resources are expected during either construction or operations of the Brightwater System.

Response to Comment C5-32

A supplemental subsurface exploration program was conducted at the Route 9 site between the Draft and Final EIS. This program, amongst other objectives, conducted in situ testing and gathered soil samples to evaluate the liquefaction potential at the Route 9 site. Please refer to Chapter 4 of the Final EIS for discussions on the minimal liquefaction potential encountered in site borings.

Response to Comment C5-33

A general analysis of potential down-gradient impacts was conducted, both with respect to groundwater drawdown and contamination potential. In general, potential effects are expected to be minimal, to be managed with standard

construction approaches, and likely to be limited to the near-surface groundwater aquifer. In addition, the groundwater removed as part of construction dewatering would be managed at the ground surface, treated if necessary, and re-introduced into the natural earth/aquifer system. Also, if private water supply wells are adversely impacted, King County would implement a Potable Water Supply Program in response, as described in Chapter 17 of the Final EIS.

Response to Comment C5-34

The Draft EIS was in error in that these wells are owned by the Woodinville Water District, not the City of Woodinville. The Final EIS revises this statement and reflects the correct ownership of the Woodinville Water District wells.

Response to Comment C5-35

The inter-relationship between the Cross Valley Water District hydrogeology, its water use, and the Brightwater Treatment Plant, if located at the Route 9 site, are discussed in detail in Appendix 6-B, Geology and Groundwater, of the Final EIS. The information, data, and numerical analyses summarized in Appendix 6-B indicate that no significant impacts to the Cross Valley Water District wells will occur as a result of construction or operation if the Brightwater Treatment Plant is constructed at the Route 9 site. Also, please refer to the response to the Washington State Department of Ecology, Comment W5-15, which provides a summary of Appendix 6-B.

Chapter 5 Air

General comment:

C5-36 The need for assurance on odor control is a critical component. However, the data presented for the Route 9 site are sketchy at best. Of particular concern is the fact that the air modeling data is based on conditions at Paine Field, a significantly different microclimate. The FEIS should analyze impacts and mitigations based on data and modeling in the Route 9 area.
The "air shed" at Route 9 is described as more difficult than Edmonds/Unocal, but the proposal is to cover secondary clarifiers and treat the air at Edmonds and not at Route 9. There is no description that shows what the remaining odor constituents (after treatment and reduction to the numbers shown in the DEIS) will smell like, so a lay-person has no way of knowing the effectiveness of the promise to meet those numbers.

C5-37 Additionally, the DEIS fails to address the reality that significant residential land use is present in the Route 9 area, including the City of Woodinville. The potential for unacceptable degradation in quality of life and health from airborne pollutants and odors due to local topographic and atmospheric conditions or treatment plant failure needs to be addressed in the FEIS.

C5-38 ***Page 5-9, Section 5.1.2.2*** *- "The Route 9 site is located at the edge of a valley surrounded by hills in Snohomish County. The topography has the potential to create challenges to good air dispersion since the emissions may not be able to pass over the hills and could be trapped in the valley."*

Comment: The DEIS makes it clear that odors can be trapped in the area. Any failure of the odor control technologies at a Route 9 plant are likely to result in significant odor impacts to the City of Woodinville. The FEIS should document the reliability history of such control technologies at other wastewater treatment plants and the reliability history of any back up or redundancy systems to address any breakdown or failure of the designed odor control system.

C5-39 ***Page 5-10, Section 5.1.2.2*** *- "In the time period from January 1, 1999, to June 18, 2002, PSCAA recorded 51 odor complaints within the zip code area 98072. Twenty-one of the 51 complaints were lodged against Eagle Crest Cabinetry, Inc. located at 8330 212th Street Southeast approximately ½ mile north of the Route 9 site. Seventeen of the 51-recorded complaints were against Stock Pot, Inc. located at 22505 SR-9, adjacent to the Route 9 site. Seven of the 17 complaints were made by one individual."*

Comment: Same as above. Additionally, in order to be able to compare the anticipated odor impact from Brightwater, more information is needed regarding the current emissions at these two sources of nuisance odor (Eagle Crest Cabinetry and Stock Pot). Such information will provide a mechanism for allowing the average citizen to compare the anticipated Brightwater impacts to the already present impacts from the other two sources.

C5-40 ***Page 5-11, Section 5.1.3*** *- The DEIS states that "Due to the local topography, portal siting areas located east of I-405 in the Bothell/Woodinville area would be subject to frequent inversions."*

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Response to Comment C5-36

Typically, air dispersion modeling is performed during the permitting phase, and 1 year of onsite data is used if available. At times, screening-level air dispersion modeling is done for the EIS. For a screening-level analysis, meteorological data from the nearest offsite meteorological station are used as no onsite meteorological data is typically available. This is a routine procedure and is accepted by the Washington State Department of Ecology and the U.S. Environmental Protection Agency.

For the Brightwater Final EIS, the meteorological data used in the air dispersion modeling analysis were above and beyond what is typically used. Meteorological stations were installed at both the Route 9 and Unocal locations in July 2002 to gather site-specific data. Nine months of data were gathered prior to the preparation of the Final EIS (1 year of data was not yet available when the modeling was performed). In addition, 4 years of meteorological data from Paine Field were analyzed. Two separate model runs were conducted for each site, one using the site-specific data and one using the Paine Field data. Using both data sets, the worst-case data from each meteorological station were modeled. Again, this is more analysis than is typically performed for an EIS.

By utilizing both the site-specific data and the Paine Field data, the model predicted worst-case maximum impacts for any single hour of meteorological data from the combined data set. The Paine Field data had a greater frequency of very stable or worst-case conditions than did the site-specific data. All the meteorological data, including the worst-case meteorological conditions, were modeled. The model will typically over predict worst-case impacts, so by using the Paine Field data (which has more worst-case days) with the site-specific data, an extra degree of conservatism was incorporated into the modeling. Additional information can

be found in Appendix 5-A, Odor and Air Quality: Treatment Plant, of the Final EIS.

Response to Comment C5-37

The air quality impact analysis included airborne pollutants and odors due to local topographic and atmospheric conditions, as well as possible treatment plant failure. Please refer to Chapter 5 and Appendix 5-A, Odor and Air Quality: Treatment Plant, of the Final EIS.

Response to Comment C5-38

The plant would have one redundant scrubber at each odor prevention area (e.g., headworks and primaries, aeration basins, etc.) for a total of six redundant units. Redundant chemical feed and chemical recirculation pumps would also be provided. Chemical scrubbers and carbon adsorption units are widely used and are reliable odor control systems provided that the scrubbers are maintained and the carbon replaced before breakthrough.

Reliability history of chemical scrubbers is not information that is required for SEPA adequacy. SEPA regulations require that probable impacts be addressed, but not those that merely have a possibility of occurring, but are remote or speculative (WAC 197-11-782). The probability of failure of the redundant scrubber system is remote and speculative. The scrubbers would be monitored and tested regularly to ensure that they are performing as designed. Additional information on monitoring is included in Appendix 5-A, Odor and Air Quality: Treatment Plant, of the Final EIS.

Response to Comment C5-39

The emissions from StockPot are far greater than the predicted emissions from the treatment plant. This is based on the fact that StockPot has no odor control system in place and emits process air that can be detected at varying distances from the site. The emissions from the Brightwater Treatment Plant would have extensive odor control systems (three stages plus a carbon scrubber). The system would treat the process air so that the odor is non-detectable at the plant's property line. Also, King County may relocate StockPot if that site is selected.

Response to Comment C5-40

Breakdowns are expected to occur infrequently and development of a specific timetable is not possible.

- Chemical and carbon scrubbers are proven odor control systems that are reliable. However, the Brightwater Treatment Plant odor prevention system would have redundant units that would increase the reliability and mitigate the breakdowns. It is not anticipated that the treatment plant would ever be in operation without the odor prevention system.
- The length of time that the odor would be present during an inversion is variable. Inversions were modeled, under worst-case odor conditions, and no offsite odor impacts were predicted.
- The amount of odor that would be emitted, at the treatment plant based on the 99.99 percent hydrogen sulfide removal, was modeled. Under worst-case conditions, the property line concentrations are below the detection threshold for odor from hydrogen sulfide, and ammonia and, therefore, are non-detectable.

Comment: If this is the case, a small breach in the odor control system could have a larger impact to our City. Greater odor control clarity is needed. The FEIS should provide additional information and analyze the following:

- How often do they expect breakdowns of the odor control system based on other similar treatment plants?
- How do they mitigate these breakdowns?
- How long would the odor hang around during a weather inversion?
- If the odor control system removes 99.99% of the hydrogen sulfide (section 5.2.2.2 pg 5-19) how does the .01% hydrogen sulfide affect "most noses"? The report says it would be non-detectable to "most noses" but what is this based on?

C5-40

Page 5-23, Section 5.2.2.2 *- The DEIS states that the predicted worst-case facility-wide H2S emission rate for the Route 9 site at 54-mgd is approximately 190,000 pounds per year without odor control and approximately 58 pounds per year with odor control (and the secondary clarifiers uncovered). For the Unocal site, the worst-case is 190,000 pounds per year without odor control and approximately 19 pounds per year with odor control.*

C5-41 Comment: It appears that the primary reason for the difference is the assumptions that secondary clarifiers would be uncovered at the Route 9 site whereas they would be covered at the Unocal site. This is unacceptable. Why are the secondary clarifiers assumed to be uncovered at the Route 9 site, an area the DEIS describes as a challenging microclimate? It appears that being uncovered results in additional H2S emissions (58 pounds per year at Route 9 vs. 19 pounds per year at Unocal). Covering clarifiers at Edmonds and achieving results with known and reasonable technologies in a more hospitable marine microclimate indicates indifference to the incompatible adjacent land uses at the Route 9 site.

Additional comments based upon information provided during the meeting of the Woodinville City Council on January 13, 2003

C5-42 Comment on Brightwater's Selection of Odor Prevention Criteria: To the extent that Brightwater's odor prevention criteria were developed to emit fewer odors than other treatment plants in North America, this goal alone is not sufficient unless Brightwater can also show that the comparison plants in North America do not emit odor. More information about the odors emitted from these comparison plants is needed before this comparison can provide any meaningful assurance regarding the odors to be emitted from the Brightwater plant. The safety factor analysis is flawed for the same reason: three times less odor than other treatment plants may still constitute a significant adverse impact to the environment if those comparison plants as

C5-43 a group emit strong odors. Brightwater's primary odor-related design criteria should be to prevent detectable odor from leaving the treatment plant at the point of exhaust. The odor

C5-44 prevention criteria for trucks and/or trains leaving the treatment plant with solid waste on-board should be similarly stringent so that detectable odor is not emitted from the truck/train along its route.

C5-45 The City of Woodinville does not accept Brightwater's definition of "non-detectable" if such term is defined as a threshold where only one half of the people on a select community-based test panel can detect the test odor. Rather, the City of Woodinville submits that the approximate

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Response to Comment C5-41

There are no longer secondary clarifiers for the Brightwater Treatment Plant, and the odor prevention systems are the same at both the Route 9 and Unocal sites.

Response to Comment C5-42

A qualitative comparison of Brightwater to other treatment plants and details of the odor prevention system are in included in Appendix 5-A, Odor and Air Quality: Treatment Plant, of the Final EIS. A survey of other similar treatment plants and their odor control systems is included in the report titled Brightwater Siting Project Phase 3 Documentation, November 2002. Brightwater would be designed to prevent offsite odors even under worst-case conditions. The odor prevention facilities include odor control systems for the biosolids haul trucks. The trucks would be ventilated to an odor control system while in the staging area. The trucks would have covers that are designed to limit odors from escaping.

Response to Comment C5-43

Brightwater's odor criterion is to have no offsite odors. The selected technologies and the odor prevention approach could achieve that goal as described in Appendix 5-A, Odor and Air Quality: Treatment Plant, of the Final EIS.

Response to Comment C5-44

Tarps over the biosolids are designed to limit odors from the biosolids trucks as they exit the treatment plant and travel to reuse sites. Please refer to the response to The Washington Tea Party, Comment O14-85, for details on odor control for the biosolids trucks.

Response to Comment C5-45

The property line odor concentrations predicted under worst-case conditions are below the initial detection thresholds for odor, hydrogen sulfide, and ammonia and significantly below

the recognition thresholds for those three parameters as described in Appendix 5-A, Odor and Air Quality: Treatment Plant, of the Final EIS. The predicted Brightwater concentrations are compared to accepted detection thresholds using standard test methods. King County does not believe that development of a separate test methodology for Brightwater is necessary or the right approach. The detection threshold approach used is valid and accepted in the industry and by agencies. The worst-case condition modeling results show that the concentrations at the property line are sufficiently under the detection thresholds, which ensures that Brightwater would not produce offsite odors. A description of other predictive models considered, but not used, is included in Appendix 5-A.

References:

Odor Control for Brightwater Treatment Facility Technical Memorandum (November 2002)

Odor Modeling Approach for the Brightwater Treatment Facility Technical Memorandum (November 2002)

initial detection threshold should be set at a much more stringent level that comports with the typical understanding of the term "non-detectable". If the verb "detect" means "to discern something barely perceptible," then "non-detectable" should mean "imperceptible" not "imperceptible to six of twelve participants in a study". At the very least the detection threshold should be reduced to zero or one out of twelve. Because the Brightwater analysis begins with and is based upon a flawed definition of "non-detectable," that flaw invalidates the entire predictive methodology used by the Brightwater consultants. The City of Woodinville proposes that a more conservative methodology be used to define the odor prevention criteria. If this criteria must be developed by using a group of twelve testers, then the detection threshold should be lowered to a level that is perceptible to zero of twelve or one of twelve, not six of twelve. More information needs to be provided regarding the other types of predictive methodology that
C5-45 could have been used but were not used along with the reasons for not using those methodologies.

Brightwater's analysis focuses on five components of odor. While the analysis provides a quantifiable concentration-based (in ppbV) initial detection threshold for hydrogen sulfide and ammonia (albeit based upon a flawed threshold), no concentration in ppbV has been measured or analyzed for the other three odor components, namely reduced sulfur compounds, amines, and fatty acids. Hence, more information needs to be provided regarding the detectable concentration levels for these three components of odor, including the reasoning for analyzing
C5-46 these components as a mixture and not individually. If concentrations of these three components cannot be measured with instruments in the same way that hydrogen sulfide and ammonia can be measured, then more information needs to be provided regarding the reasons for that inability. Also, since these five compounds are referred to as "compounds of focus," more information needs to be provided regarding the compounds of odor that are not being focused upon, whether the concentrations of those compounds can be measured with instruments, and if so, the ppbV concentration levels at which those compounds are detectable.

The comparison to the operation at the South Plant indicates that biosolids truck loading has the potential to create and/or emit a significant amount of odor relative to some of the other processes at the South Plant. Even if such loading is done in a contained facility at the Route 9 site, more information needs to be provided to explain the alternatives for preventing odor
C5-47 emission when truck or train containers are brought out of the enclosed facility. If it is anticipated that odor will escape, either from the container itself or from the facility, when containers about brought out of the enclosed area, then more information needs to be provided regarding the modeling that has been done to quantify the extent of such odor emissions. Also, more information needs to be provided regarding technology available to prevent such containers from emitting odor.

C5-48 Comment on Brightwater's Analysis of Air Flows / Site Conditions: Certain assumptions have been made that the odors emitted from Brightwater will dissipate within 50 to 500 feet of the exhaust source. More information needs to be provided to analyze the accuracy of this assumption by collecting information regarding existing dispersion patterns in the same "air shed". For example, since there have been complaints registered against Stock Pot, Inc. and Eagle Crest Cabinetry, the dispersion assumptions for Brightwater should be tested by sampling odor concentrations at the exhaust points of these two existing point sources and taking other

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Response to Comment C5-46

In the Final EIS odor and ammonia were considered in addition to hydrogen sulfide. Odor is a measurement of all the odorous compounds in emissions from a wastewater treatment plant (e.g., hydrogen sulfide, ammonia, reduced sulfur compounds, amines, fatty acids, etc.). The odor detection threshold and predicted worst-case property line odor concentrations are described in Appendix 5-A, Odor and Air Quality: Treatment Plant, of the Final EIS.

Response to Comment C5-47

Please refer to the response to The Washington Tea Party, Comment O14-85.

Response to Comment C5-48

Dispersion modeling of emissions from the Route 9 site is included in the Final EIS. Site-specific meteorological data from the Route 9 site were used in the odor dispersion modeling performed for the Final EIS and described in Appendix 5-A, Odor and Air Quality: Treatment Plant.

The emissions from StockPot are far greater than predicted emissions from the treatment plant. This is based on the fact that StockPot has no odor control system in place and emits process air that can be detected at varying distances from the site. The emissions from the Brightwater Treatment Plant would have extensive odor control systems (three stages plus a carbon scrubber). The system would treat the process air so that the odor is non-detectable at the plant's property line.

concentration samples downwind in one hundred foot increments to confirm that those existing odors do disperse at the same rates assumed by the Brightwater consultants. This testing should occur over a twelve-month period to get an accurate measure of the dispersion rates in the air shed as the seasons change. Similar testing should occur at the Unocal site so that an accurate comparison can be made. Testing should involve use of olfactometer, chemical analysis, and any other available technology. Such testing is necessary due to the unique qualities of this air shed. While the Brightwater consultants have some meteorological data for the Route 9 site, the City of Woodinville does not think that the dispersion pattern assumptions can be supported solely by reference to six months of meteorological data. The approach currently used by the Brightwater consultants relies too much on modeling on not enough on reality, especially considering that an existing odor source provides an excellent means of testing the modeling
C5-48 hypothesis and also considering that the community will have to live with the results of the modeling for fifty years or more.

C5-49 Additional information is needed to further explain the relationship between inversion levels and odor dispersion patterns and the modeling derived from that relationship.

Comment on Brightwater's Analysis of Other Contemporary Treatment Plants: Additional information needs to be provided regarding the Las Vegas, San Francisco (Oceanside), Vancouver (Marine Park), and San Diego (North City) treatment plants including but not limited to the following: ppbV concentration of at plant exhaust and plant fence line for each of the five
C5-50 primary odor components; odor dispersion rates for each plant (e.g., by measuring concentration of odor components at 50 feet from exhaust, 100 feet from exhaust, 500 feet from exhaust, etc.); air shed characteristics for each plant (e.g., prevailing wind direction, average wind speed, number of inversion hours per year, etc.); number of residences within one mile (downwind only) of each plant; the year that each plant came on-line; complaint statistics for 2002 for each plant; and neighboring land uses through which each plant's biosolids trucks pass.

Comment on Brightwater's Proposed Odor Prevention Approach: Additional information needs to be provided regarding the possibility of using thermal destruction to further reduce odor
C5-51 emissions from the treatment plant, including information regarding the environmental impacts of such thermal destruction. Additional information needs to be provided regarding the various options for "polishing" the scrubber exhaust, including but not limited to comparing biofilter technology to carbon vessel technology.

C5-52 Additional information is needed regarding the technology available to prevent trucks from emitting odors as they leave the site and travel through the adjoining neighborhoods. In particular, the possibility of pressurizing truck containers should be analyzed.

Additional information is needed regarding the quantity and quality of odor to be emitted from digester cleaning and other small sources not maintained within the proposed ventilation system.
C5-53 Additional information is needed to explain why these items are proposed to be excluded from the proposed ventilation system. Additional information is needed to analyze the reasons that odor emission is expected to be worse during system maintenance.

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Response to Comment C5-49

King County has provided additional information about the dispersion modeling procedures used and the meteorological data used in the odor and air quality modeling in Appendix 5-A, Odor and Air Quality: Treatment Plant, of the Final EIS. As mentioned in the Draft EIS, meteorological data are being collected from two monitoring stations, one located at the Unocal site and one at the Route 9 site. The intent has been to collect 12 months of data that will be used in the modeling for the Notice of Construction permit. At the time of the Final EIS, 9 months of data had been collected, which has been used for the odor and air modeling for the Final EIS. In addition, 4 years of data from Paine Field has also been modeled. The Paine Field data provide the model with additional potential weather patterns to evaluate. Please refer to the Final EIS for additional information on this subject.

Response to Comment C5-50

The information requested on the Las Vegas, San Francisco, Vancouver, and San Diego wastewater treatment plants is not required by SEPA for the Brightwater Final EIS. However, much of this information has been compiled and can be found in the odor survey completed for the report titled *Brightwater Siting Project, Phase 3 Documentation* (November 2002).

References:

Odor Control for Brightwater Treatment Facility Technical Memorandum (November 2002)

Odor Modeling Approach for the Brightwater Treatment Facility Technical Memorandum (November 2002)

Response to Comment C5-51

Appendix 5-A, Odor and Air Quality: Treatment Plant, of the Final EIS discusses the odor control technologies evaluated, including thermal oxidation and the procedure used to select the chosen technology for the plant. The section also compares the proposed treatment plant to other existing

treatment plants. Thermal oxidation has the associated negatives of needing to consume energy in the form of fuel and the generation of combustion emissions.

Response to Comment C5-52

Tarps over the biosolids are designed to limit odors from the biosolids trucks as they exit the treatment plant and travel to reuse sites. Also, the trucks will generally travel during off-peak hours. The exact method of odor control has not yet been determined. The concept of pressurizing trucks is being considered. Please refer to the response to The Washington Tea Party, Comment O14-85, for details on odor control for the biosolids trucks.

Response to Comment C5-53

Odor control during digester cleaning would be done using a dedicated odor control system. The digesters would be ventilated and the process air treated in a carbon adsorption system. All liquids processes that are covered will also have dedicated maintenance air systems that would be used during basin cleaning. No processes would be without odor control during both normal operations and during maintenance.

C5-54 Additional information is needed to answer the following questions regarding the split flow membrane bioreactor layout: What other options are there for such a layout? What methodology was used to design the proposed layout? Does the proposed layout allow plenty of room to add scrubbers or other new technology that might become available in the future?

C5-55 Comment on Brightwater's Results of Modeling: Additional information is needed to analyze the accuracy of Brightwater's odor/air dispersion modeling.

Also, additional information is needed to analyze the applicability following three types of modeling: toxi-chem; water 9; and base modeling.

C5-56 Comment on Brightwater's Proposed Mitigation Measures:
Biosolid truck trips: Since it appears that these trips have the potential to cause higher levels of odor emission than regular plant operations, both at the plant and along the route, the occurrence of such trips should be limited to times when the weather would be conducive to more rapid odor dispersion. For example, such trips should only occur during times of heavy wind and rain.

C5-57 Additionally, a new on-ramp should be constructed directly from the treatment plant to SR 522 so that odor-emitting trucks will not have to make trips through the surrounding neighborhoods.

C5-58 Chemical scrubbers: Five stages of chemical scrubbers should be included in the plant design, one for every component of odor focused on in the Brightwater analysis. In addition, a carbon vessel should be used as a polisher after the fifth stage of scrubbing.

C5-59 Odor masking: While the primary goal of the plant design should be to make emissions from the plant imperceptible, the plant should also incorporate within its design some natural odor masking. For example, pleasantly fragrant shrubs and trees should be planted at the site in sufficient quantity and size to ensure that the pleasant smell from such plantings will outweigh the plant's odor emissions when measured in ppbV concentrations at the fence line, and in sufficient quantity and size to ensure that, at the fence line, passers-by will notice the pleasant fragrance instead of the odor. The plantings should be chosen to ensure that the vegetative blooming is staggered throughout the months when inversions are most likely.

C5-60 Performance bond: The county should place a bond to guarantee the performance of the Brightwater plant. The bond should be of sufficient size to ensure that money will be available to implement new technology or additional features in the future in the event that the current proposed technology does not perform as promised. To be held accountable for its own odor creation, the project should include money to eradicate current odors from Stock Pot that might have the effect of masking Brightwater's contribution to the odor in the area.

Chapter 6 Surface Water

C5-61 General Comments

The collecting and rerouting of groundwater around the site as it relates to Endangered Species Act strategies and investments in Little Bear Creek is a concern. Increased turbidity during

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Response to Comment C5-54

The proposed split flow membrane bioreactor (MBR) process is described in detail in Appendix 3-A, Project Description: Treatment Plant and Chapter 3 of the Final EIS. The split flow process would allow the MBR process to be configured to accommodate a daily flow in excess of the average wet weather flow (AWWF), but below the peak day flows. The maximum capacity that could be treated by the MBR is termed the secondary treatment, or split flow, threshold. Flows in excess of the secondary treatment threshold constitute a split flow that would be routed around the MBR. The split flow would be treated using an alternative process better suited to hydraulic peaks, such as ballasted sedimentation. The split flow would be blended with the MBR effluent and disinfected prior to discharge.

The proposed layout reserves additional space to convert the MBR system to a conventional activated sludge system with secondary clarifiers if so desired in the future. There is room for future expansion to 54 mgd as well. There is also room reserved for scrubbers for odor control.

Response to Comment C5-55

Additional information on the modeling procedures used to determine impacts are provided in Appendix 5-A, Odor and Air Quality: Treatment Plant. The section provides information on why certain modeling procedures were chosen over other modeling procedures and the input parameters used in the modeling.

Response to Comment C5-56

Please refer to the response to The Washington Tea Party, Comment O14-85.

Response to Comment C5-57

The Brightwater project would include mitigation for impacts due to construction traffic. Minimal impacts are anticipated for truck trips during operation of the Route 9 site, so a direct

access to SR-522 is not being considered. Other mitigation would be proposed as listed in Chapter 16 of the Final EIS. The mitigation measures would be coordinated with the local jurisdiction during the permitting process.

Response to Comment C5-58

Four stages of scrubbing would be used: three chemical stages followed by a carbon stage. Five stages are not necessary to meet the goal of no offsite odors. This can be met using the proposed four-stage system.

Response to Comment C5-59

Significant reforestation of the Route 9 site is proposed. The specific species of trees and plants that would be planted is a refinement that would occur in the design phase. Fragrant vegetation may be considered.

Response to Comment C5-60

For updated information on air quality please refer to Chapter 5 of the Final EIS. Please refer to the response to the City of Shoreline, Comment C6-5, regarding mitigation suggestions.

Response to Comment C5-61

The Final EIS contains substantial new information on potential impacts to streams during construction and operation. This new information includes more specificity on stormwater management during construction and operation, and on the potential impacts of and mitigation for dewatering. Please refer to the response to the Washington Department of Fish and Wildlife, Comment W4-21, for more information on dewatering. The re-introduction of clean, dewatered water to Little Bear Creek would minimize flow impacts. Please refer to the response to the Washington State Department Natural and Resources, Comment W3-123, for information on the use of enhanced treatment of stormwater to minimize impacts, including turbidity, to fish-bearing streams. Chapters 6 and 7 of the Final EIS also provide more information on impacts and mitigation for surface water and plants, animals, and wetlands. With respect to consistency with Endangered Species Act (ESA) “strategies,” King County is currently consulting with NOAA Fisheries (formerly National Marine Fisheries Service) and the U.S. Fish and Wildlife Service to assess potential impacts to listed species as part of the permitting process for the project. As part of this process, King County will be preparing a Biological Assessment to help comply with Section 7 of the ESA.

construction and increased flows during construction and operation needs to be quantified and reviewed against ESA strategies.

Any impacts to the Puget Sound, Lake Washington, and its tributaries can impact fish runs in the Sammamish River, and Little Bear Creek.

C5-61 "Temporary water quality impacts…" is mentioned many times throughout the DEIS. Along with "…potentially significant impacts are not anticipated." Temporary water quality impacts should be looked at as potentially significant impacts. The impacts should not be dismissed as insignificant solely because they would be limited to the construction period. The Sammamish River and Little Bear Creek habitat quality has been rated as low and are on the 303(d) list. Any "temporary impact" can cause further degradation of this salmon habitat. The FEIS should provide more information to support the claim of the DEIS that "potentially significant impacts are not anticipated".

C5-62 ***Page 6-7, Section 6.1.2.2, paragraph 2***

Comment: This should say: "The lower 1.8 miles and mouth of the stream are located in ~~King County~~ the City of Woodinville."

C5-63 ***Page 6-7, Section 6.1.2.2, paragraph 4*** - *"Snohomish County, which rates fish-bearing streams according to guidelines from the Washington State Department of Natural Resources (DNR), rates Little Bear Creek as a DNR Type 1 water from the mouth to SR-522, and a Type 2 water from SR-522 to its headwaters."*

Comment: City of Woodinville Zoning Codes rates Little Bear Creek as DNR Type 1 water from the mouth to 132nd Avenue NE. What is King County's rating? Additional information is needed to determine which rating is correct.

C5-64 ***Page 6-8, Section 6.1.2.2, paragraph 7*** - *"Little Bear Creek is listed on the 1998 CWA 303(d) list for fecal coliform at three locations. At present, no TMDL study or basin action plan has been initiated by Ecology for Little Bear Creek."*

Comment: In October 2002, DOE requested data for 303(d) listed waterways. Has KC provided any information for Little Bear Creek? Additional information is needed to determine how the treatment plant will affect the 303(d) listing.

C5-65 ***Page 6-9, Section 6.1.2.2, paragraph 5*** - *"A fish-rearing pond is located on the treatment plant site east of SR-9 in the northwestern corner of the developed portion of the site. Constructed in 1998 as mitigation for impacts from development of the Stock Pot Soup facility, the fish-rearing pond is fed by flows from the 228th Street Tributary Channels A and B and a small piped watercourse that transports stormwater from the Stock Pot Soup property. A fish ladder constructed from a series of concrete weirs connects the pond to a new culvert under SR-9."*

Comment: Additional information is needed to answer the following questions: Will there be any impacts to the pond or the source of flow if the project is built? Does the Brightwater project have any opportunity to improve, enhance or augment this mitigation? If so, please describe.

C5-66 ***Page 6-10, Section 6.1.2.2, paragraph 4*** - *The DEIS states there are a number of watercourses that convey offsite flows through this site from the surrounding areas to Little Bear Creek that may not be treated properly.*

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Response to Comment C5-62

Chapter 6 of the Final EIS text has been revised to reflect the location of the lower 1.8 miles of Little Bear Creek within the City of Woodinville.

Response to Comment C5-63

Chapter 6 of the Final EIS text has been revised to clarify that Snohomish County uses a five-tiered stream typing system, which classifies Type 1 waters as those waters inventoried as Shorelines of the State pursuant to RCW Chapter 90.58. Shorelines of the State include shorelines downstream of a point where the mean annual flow is 20 cubic feet per second. King County and the City of Woodinville use a three-tiered stream typing system, also classifying Class 1 waters as Shorelines of the State pursuant to RCW Chapter 90.58. Following jurisdictional boundaries, Little Bear Creek is classified as a Class 1 stream from the mouth to 132nd Avenue NE. From 132nd Avenue NE to the King/Snohomish County line, Little Bear Creek is classified as a Class 2 stream. Little Bear Creek is classified as a WA DNR Type 2 stream from the county line to 51st Avenue SE, including the segment of the stream that flows adjacent to the Route 9 treatment plant site.

Response to Comment C5-64

Water quality in Little Bear Creek in the vicinity of the Route 9 site is monitored by Snohomish County Surface Water Management. Snohomish County's monitoring of Little Bear Creek includes collection of fecal coliform data at several locations along the stream, and includes 2003 data. King County is currently working with the Washington State Department of Ecology to provide the agency with water quality data for portions of this stream located in King County.

Response to Comment C5-65

The Final EIS includes additional information on impacts to the fish-rearing pond, including the source of flow. Additional information on mitigation is provided in the project descriptions in Chapters 3 and 7 of the Final EIS. Information on existing conditions in the rearing pond is provided in Appendix 7-A, Affected Environment: Plants and Animals, of the Final EIS.

Overall, the pond may be accessible during higher flow periods in the late winter and early spring, but low water quality and high summer temperatures are anticipated to limit year-round use of the pond by salmonid fish. The proposed project removes the fish-rearing pond. The project would mitigate for impacts due to this removal by improving fish habitat functions and wetlands on the site. This would be accomplished by re-routing streams to the north and south of the site and by enhancing and creating wetlands (refer to Figures in Chapter 3). These enhancements would be designed to result in a net increase in the quality of fish habitat compared to the habitat provided by the current fish-rearing pond. Mitigation and enhancement plans are being coordinated with the U.S. Army Corps of Engineers, Snohomish County, the Washington State Department of Fish and Wildlife, and other agencies. Mitigation and enhancement plans would be developed in greater detail as more design on the treatment plant is completed.

Response to Comment C5-66

The Route 9 site would replace a large area with numerous commercial/industrial activities, most of which do not have stormwater management facilities. The project would construct a large stormwater management system that would treat and detain all runoff from this area. The area up-gradient of the project site is nearly 300 acres, about three times the area of the project site itself. Most of the up-gradient area is in rural land uses. SR-522, the largest single facility in this up-gradient area, was recently reconstructed; its stormwater runoff currently receives treatment. Up-gradient flows, such as the watercourses flowing across the project site, are typically diverted around a project site, and this is the strategy proposed for this project.

Opportunities may exist to develop regional stormwater facilities in conjunction with the Washington State Department of Transportation (WSDOT). WSDOT is planning to widen SR-9, along the western boundary of the Route 9 site. King County will review the feasibility of either providing WSDOT land for treatment of highway runoff or developing joint stormwater treatment facilities to treat runoff from both the highway and the treatment plant.

C5-66 Comment: Redevelopment of this site provides an opportunity for regional water quality treatment. These opportunities should be described in the FEIS; including the opportunity to collect all water courses plus construction runoff to treat the entire surface water from commencement of the project.

C5-67 ***Page 6-12, Section 6.1.3.1, paragraph 4 -*** *"The Sammamish River is on the 1998 CWA 303(d) list for fecal coliform bacteria, dissolved oxygen, and temperature."*

Comment: An emergency overflow is proposed on the Sammamish River at Kenmore. Additional information is needed to determine how the overflow or treatment plant would affect the 303(d) listing. More information is needed on potential overflows into the Sammamish River and tributaries including Little Bear Creek. What quantities could occur and at what frequency? What would be the impacts of these overflows?

C5-68 ***Page 6-12, Section 6.1.3.1, paragraph 4 -*** *The DEIS states: "Runoff volume for storm water was estimated by using the Santa Barbara unit hydrograph method for both sites. The detention volume was estimated by using Ecology's (2000) Western Washington Hydrological Model (WWHM) for the Route 9 site."*

Comment: The quantity of treated water and the volume calculations method should be stated.

C5-69 ***Page 6-22, Section 6.2.2.1, paragraph 1 -*** *"In lowering groundwater elevations, dewatering could temporarily divert water that feeds streams or wetlands. Small streams would be* most susceptible to this potential impact, particularly during summer low-flow conditions."

Comment: The impacts to Little Bear Creek due to dewatering should be stated. Mitigation should include restricting dewatering during periods of fish migration, and spawning. Analysis of impacts to wetlands in the stormwater treatment area is needed. There is a likely aquifer discharge area in this area. Impacts of excavation and pond development need to be analyzed.

C5-70 ***Page 6-25, Section 6.2.2.1, paragraph 2 -*** *"Because the site includes 13 piped and open water bodies that ultimately discharge to Little Bear Creek, there is a potential for increased sediment loads to Little Bear Creek, even with implementation and monitoring of onsite erosion and sediment control BMPs. Significant discharges of sediments to Little Bear Creek could result in detrimental water quality impacts, as described under Common Construction Impacts above."*

Comment: This impact to Little Bear Creek is unacceptable. Area jurisdictions, including King and Snohomish Counties and the City of Woodinville are making significant investments in planning and improving salmon runs in Little Bear Creek. BMPs should be monitored and inspected daily at a minimum. Turbidity measurements should be recorded. Any failure of the BMP must be corrected immediately. With a stormwater treatment area segregated from the construction site, an excellent opportunity exists to develop treatment ponds and catchment/pumping systems before construction and to fully treat during construction. The City of Woodinville proposes that the above described impact to Little Bear Creek be fully mitigated either by developing a sophisticated stormwater treatment and detention system before any other construction begins on the plant or by some other similar means. These mitigations should be more fully described in the FEIS.

C5-71 ***Page 6-26, Section 6.2.2.1, paragraph 2 -*** *"It may be necessary to treat dewatering water and discharge it to existing surface waters (e.g., Little Bear Creek, onsite streams)."*

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Response to Comment C5-67

Chapter 6 of the Final EIS text has been revised to discuss aspects of potential emergency overflows. The impacts of an emergency overflow could include temporary but significant increases in fecal coliform bacteria, temperature, biological oxygen demand, turbidity, and total suspended solids and a decrease in dissolved oxygen. As the overflow is located near the mouth of the Sammamish River in Lake Washington, the impacts would be short lived due to dilution within the lake. The duration of the emergency overflow is unknown because it would vary depending on the size and nature of the emergency. However, the existing storage capacity plus the new influent tunnel would provide a minimum of six hours of wastewater storage before an overflow would occur. Considering that the Sammamish River is listed on the 1998 303(d) list for fecal coliform bacteria in several locations, continued emergency spills under the No Action Alternative could impact efforts to resolve fecal coliform issues in the Sammamish River. Construction of the Brightwater facilities would reduce the likelihood of this event occurring because of the increased capacity and flexibility in the proposed system. Following project construction, emergency overflow events would have a likelihood of occurrence of less than 1 in 100 years through Phase 1 (2010 to 2040) and less than 1 in 75 years at Phase 2 completion (2050). Please refer to Appendix 3-E, Flow Management and Safety Relief Point, of the Final EIS for additional information.

Response to Comment C5-68

Updated stormwater detention and water quality treatment volumes for the Route 9 site can be found in the Chapter 6 and Appendix 6-D, Permanent Stormwater Management at the Treatment Plant Sites, of the Final EIS.

Response to Comment C5-69

Please refer to the response to the Washington State Department of Ecology, Comment W5-15, and Appendix 6-

B, Geology and Groundwater, of the Final EIS for a detailed discussion of this issue.

Response to Comment C5-70

King County acknowledges the resource value of Little Bear Creek, and is committed to implementing stringent measures to avoid impacts to this important stream. However, with any major construction project, there is the potential for accidental releases of sediments, even with the most stringently applied erosion and sediment control measures. The potential for these releases is low. The statement in the Draft EIS is a disclosure of a potential worst-case scenario that could occur under rare circumstances that are difficult to predict. The Final EIS text has been revised to reflect additional site-specific evaluation at the Route 9 site.

Best management practices to control erosion and avoid sedimentation would be implemented, in accordance with state and local guidelines. These measures are described in detail in Chapter 6. During construction, onsite monitoring of the erosion control facilities would be actively carried out by King County in accordance with the project Storm Water Pollution Prevention Plan (SWPPP) approved by the Washington State Department of Ecology and the local agency (Snohomish County or the City of Edmonds). This would include daily inspections of erosion control measures during the wet season, and weekly inspections during the dry season and following larger storm events. Discharges of treated stormwater would be monitored for turbidity, pH, and any other parameters identified in the monitoring plan as part of the SWPPP. The stream receiving runoff from the treatment plant site (Little Bear Creek for the Route 9 site or Willow Creek for the Unocal site) would be monitored for turbidity weekly during the dry season, and daily during the wet season, both upstream and downstream of the inflows from the project site during the construction period. If increases in turbidity levels in the creek exceed 5 NTUs due to project discharges, measures would be undertaken to reduce turbidity levels to meet state water quality standards. These measures could include advanced stormwater treatment as necessary to reduce the turbidity of the site discharge(s) to compliant levels. More information can be found in Appendix 6-C, Management of Water Quality During Construction at the Treatment Plant Sites, of the Final EIS.

Response to Comment C5-71

A geomorphic study of the Little Bear Creek channel in the vicinity of the project site has been completed. That study documents little active stream erosion. As a result of stormwater detention provided by the project, peak flows in Little Bear Creek would decline slightly, which is a beneficial effect. More information can be found in Appendix 6-E, Route 9 Site Runoff Effects on the Geomorphology of Little Bear Creek. Also, please refer to the response to the Washington State Department of Ecology, Comment W5-4.

C5-71 Comment: Water quality may be addressed, but quantity should be evaluated. Bank erosion due to point discharge and increased flow rates must be prevented. Downstream erosion areas already exist, and further degradation is not acceptable. Flow dispersion may be an option. The FEIS should provide more information on discharge rates and how they will be controlled to prevent erosion or other impacts of rapid discharge.

C5-72 ***Page 6-26, Section 6.2.2.1, paragraph 2 -*** *"Relocating and combining watercourses and streams within a mitigation area would result in temporary increases in turbidity and sedimentation of these surface waters and Little Bear Creek."*

Comment: In Chapter 3, table 3-5, it is estimated that site preparation will take up to three years. Is "temporary" equivalent to three years? Additional information is needed to determine how the site preparation might damage spawning areas and other habitat uses. As used in the DEIS, explain the duration or other meaning of "temporary".

C5-73 ***Page 6-31, Section 6.2.2.2, paragraph 5 -*** *"Using WWHM and assuming the site is in a predevelopment, forested condition, approximately 31 acre-feet of detention volume and 7 acre-feet of storm water treatment volume would be required for the Route 9 plant site (Table 6-4)."*

Comment: The possibility of a regional water quality treatment facility in the local area that could serve multiple developments should be assessed. The City proposes that the impacts to Little Bear Creek be mitigated through construction of such a facility.

C5-74 ***Page 6-32, Section 6.2.2.2, paragraph 1 -*** *"Storm water would be collected in the lowest area of the treatment plant along Route 9 and pumped to the storm water facility."*

Comment: An emergency generator should be provided for the pump station.

C5-75 ***Page 6-35, Section 6.2.3.1, paragraph 4 -*** *"Dewatering would occur associated with the vertical access shafts as well as from the tunnel excavation. Estimated dewatering rates range from 0.02 to greater than 23.4 cubic feet per second (cfs) (from 10 to greater than 10,500 gallons per minute [gpm]) for the vertical access shafts, and from 0.57 to 9.7 cfs (250 to 4,250 gpm) for the tunnel."*

Comment: The impacts to the Sammamish River, and Little Bear Creek due to dewatering should be stated. Mitigation should include restricting dewatering during periods of fish migration, and spawning, or using construction methods such as freezing that minimize dewatering flows. The FEIS should provide information that addresses these concerns.

C5-76 ***Page 6-52, Section 6.3.***

Comment: Mitigation measures described are all general, vague and weakly described when considering that these construction flows could discharge to an endangered salmon stream. After final site selection, site-specific mitigation plans should be provided and approved by the City of Woodinville and other affected jurisdictions.

Chapter 7 Plants, Animals, and Wetlands

C5-77 General Comments

The potential impact of any existing ground contamination and the need for site cleanup is inadequately addressed. Chapter 4 states that the limited investigation conducted for the DEIS found one property on Ecology's "confirmed and contaminated site list" and Chapter 4 further

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Response to Comment C5-72

Although site preparation could take up to 3 years, the associated sedimentation impacts are considered to be temporary impacts .

All stream relocation would occur in accordance with the permit conditions and requirements imposed by the U.S. Army Corps of Engineers, Washington State Department of Fish and Wildlife, NOAA Fisheries and/or U.S. Fish and Wildlife Service, and Snohomish County. Permit conditions are intended to protect sensitive resources during and following construction. Permit conditions would likely limit construction to work windows that avoid critical spawning and migration periods. Flows in the channel being reconstructed would be temporarily diverted upstream of the construction activity, piped or otherwise routed around all disturbed areas, and discharged downstream in accordance with applicable permit requirements.

Following construction and vegetation, flow diversion to the relocated stream channels would be delayed for 3 to 6 months to allow for their stabilization. This would minimize the chance for sedimentation occurring in the new channels after flows are returned. Based upon past experience with new stream channels, sedimentation is expected to return to background levels after the first season and is not expected to affect existing spawning beds. It is anticipated that at least a portion of the relocated streams would provide additional high-quality spawning and rearing habitat.

Response to Comment C5-73

Please refer to the response to Comment C5-66 in this letter.

Response to Comment C5-74

The stormwater facility would be an integral part of the treatment plant site development. The backup power facilities for the treatment plant are described in Chapter 8 of the Final EIS.

Response to Comment C5-75

Please refer to the response to the Washington State Department of Ecology, Comments W5-9 and W5-15, relative to groundwater analyses and effects on Little Bear Creek from conveyance pipelines and the treatment plant, if located at the Route 9 site.

Response to Comment C5-76

Please refer to the response to the Washington State Department of Ecology, Comments W5-9, W5-15 and W5-40. Additional detail is provided in Appendix 6-B, Geology and Groundwater.

Response to Comment C5-77

Please refer to the response to the Washington State Department of Ecology, Comment W5-43.

states that "past and current industrial uses of many of the site's properties" suggest that contamination may be present. Additional site investigation is needed to evaluate the possibility of contamination at the Route 9 properties. A portion of the proposed Route 9 treatment plan site occupies existing and former auto recycling businesses. Additional information is needed to determine the potential for the presence of ground contamination from these activities and to clarify the steps planned for the assessment and remediation of potential ground contamination. Additionally, what plans are there to assess and mitigate the potential impact of pollution discharge from plant mechanical failures or accidents? C5-77

Page 7-13, Section 7.1.2.2 - *"Chinook salmon likely spawn in Little Bear Creek downstream of the site; historically they have occasionally been sighted upstream of 205th Street."*

Comment: Chinook salmon are known to spawn upstream of NE 205th Street in Snohomish County. The impacts section is generic in approach and does not address specific impacts to "special status species" in Little Bear Creek. This section (7.2.2.1; page 7-63) refers the reader to a technical appendix for ESA information. Findings of this appendix should be summarized in the body of the FEIS to provide the reader with information in the context of other discussions of impacts and mitigations. C5-78

Page 7-15, Section 7.1.2.2, paragraph 2. *Paragraph 2 summarizes the fish usage of the onsite creeks.* C5-79

Comment: There is no mention of fish use for 228th Street SE Creek Channel B. This should be addressed in the FEIS.

Page 7-15, Section 7.1.2.2, paragraph 3. *"Thus, the Unnamed Creek does not appear to have habitat access."* C5-80

Comment: Figure 7-2 shows a forested area surrounding Unnamed Creek. This could indicate possibly good habitat. Removal of the barriers and providing access should be considered.

Page 7-39, Section 7.1.3.1 - *Little Bear Creek originates in Snohomish County, flows southward into King County, and empties into the Sammamish River.* C5-81

Comment: There is no mention that the creek passes through the City of Woodinville. This should be included in the FEIS.

Page 7-41, Section 7.1.3 – *"The overall suitability of the Sammamish River habitat to support salmonids has been rated fair (Metro, 1994). The river has poor to fair spawning substrate."*

Comment: It is important to point out that the Sammamish River may be fair in its rating and may be poor spawning substrate, but it is a major thoroughfare/highway for spawning salmon to get to their spawning grounds. The FEIS should also review and adapt useful strategies from the Corps of Engineers study; "Sammamish River Corridor Action Plan" to analyze and identify opportunities to upgrade the Sammamish River habitat, especially downstream of the Route 9 site. C5-82

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Response to Comment C5-78

Appendix 7-B, Route 9 Sensitive Areas Technical Report, of the Final EIS summarizes Washington State Department of Fish and Wildlife chinook spawning data for Little Bear Creek. This report indicates that chinook are known to spawn upstream of NE 205th Street in Snohomish County. Chapter 7, of the Final EIS, has also been revised to include an impact analysis for special status species on the Route 9 site and in adjacent Little Bear Creek.

Response to Comment C5-79

According to Snohomish County (Middaugh, personal communication, 2003), fish are precluded from accessing 228th Street Creek, Channel B by an L-shaped pipe. Channel B is piped through the project site; no fish habitat exists in this piped section of stream.

Reference:

Middaugh, Randy, Senior Biologist, Snohomish County Personal Communication, telephone conversation with Linda Krippner, Adolfson Associates, March 2003.

Response to Comment C5-80

King County recognizes the potential fish habitat in Unnamed Creek; this recognition has been incorporated into the mitigation design in the Final EIS. The stream would be rerouted and enhanced through the planned stream and wetland mitigation area on the north portion of the site and directed to a fish passable culvert beneath SR-9 to Little Bear Creek. Refer to the mitigation section of Chapter 7 in the Final EIS.

Response to Comment C5-81

Text indicating that Little Bear Creek flows through the City of Woodinville before entering the Sammamish River has been added to Chapter 7 of the Final EIS.

Response to Comment C5-82

Current conceptual mitigation plans largely focus on mitigation for impacts to sensitive areas on treatment plant and portal sites. Mitigation is proposed to occur either on sites, or in the immediate vicinity of sites. This approach is consistent with regulatory direction provided by local, state, and federal permitting agencies, which typically focus on replacing lost functions, either onsite or in the same watershed sub-basin. Impacts to the Sammamish River during construction would be limited to construction of the proposed safety relief point. King County recognizes the value of the Sammamish River for salmonids and will work with permitting agencies to appropriately mitigate these impacts. Refer to Chapter 7 of the Final EIS for more information on impacts and potential mitigation measures.

C5-83 ***Page 7-62, Section 7.2.2.1- paragraph 5.*** *Paragraph 5 describes a high amount of impacts to the habitat and various species.*

Comment: Additional information is needed regarding the proposed methods of mitigating this impact. Describe the acceptable level of impact and cite references.

C5-84 ***Page 7-68, Section 7.2.2.2*** *"The centralized approach as proposed is expected to result in the greatest acreage of habitat affected."*

Comment: Why is the centralized stormwater approach being used in the site design when it states that it affects the greatest acreage of habitat? Other alternatives should be considered such as a system along the perimeter or a decentralized approach with multiple stormwater facilities or linear connected facilities.

C5-85 ***Page 7-69, Section 7.2.2.2*** *This section states that stormwater flows could have a negative effect on receiving waters and fish, but that it such flows are not expected to have such an effect.*

Comment: This section seems to contradict itself. During flood events when storm ponds overflow, sedimentation, along with water quality/quantity could pose a problem for receiving water bodies, especially during spawning season. This section states that it will not. This needs to be explained or corrected.

C5-86 ***Page 7-72, Section 7.2.2.2, paragraph 1*** *"Also, up to 8 watercourses would be reconfigured and directed to stream/wetland restoration areas, which would provide cleaner, cooler, nutrient-rich water to Little Bear Creek that would benefit fish."*

Comment: This contradicts the statement on page 7-69, "Although stormwater runoff will be treated prior to release into Little Bear Creek, stormwater detention ponds can raise the temperature and lower the dissolved oxygen content of water released to receiving streams." This apparent contradiction needs to be clarified and reconciled in a manner that indicates appropriate mitigation.

C5-87 ***Page 7-77, Section 7.2.3.2, paragraph 1.*** *"Overflows would be discharged directly to either Sammamish River or Lake Washington and no impacts to terrestrial species is expected to occur, except if contaminants wash up onshore."*

Comment: Terrestrial species may use surface water to forage for food, drink or move through. By use of surface water in these or other ways, overflow discharge can impact the species. The FEIS should describe such potential impacts and how they will be mitigated.

C5-88 ***Page 7-77, Section 7.2.3.2, paragraph 1 -*** *"Most contaminants would be broken down biologically or chemically or diluted and water quality would return to a cleaner condition."*

Comment: Define cleaner condition. As written, this sounds like acceptance of contamination. This section should be rewritten to substantiate its claims or delete them.

C5-89 ***Page 7-99, Section 7.2.5, paragraph 1 -*** *"Current development plans for both sites, other than use as a treatment plant, could result in at least as much disturbance to fish, birds, and mammals as a treatment plant would cause."*

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Response to Comment C5-83

Projected habitat losses have changed substantially since publication of the Draft EIS. As presently proposed, habitat losses on the Route 9 site would be offset by restoration and enhancement of wetland, stream buffer, and upland habitats on the north and south portions of the site. Detailed habitat restoration and enhancement plans will be developed during the permitting process. Please refer to Chapters 3 and 7 of the Final EIS for an updated description of the proposed habitat restoration designs for the Route 9 site.

"Acceptable" levels of impact are largely discretionary but can depend on individual species or habitat types, varying spatial or temporal scales, and feasibility of mitigation. King County intends to minimize impacts to wildlife species and habitat wherever feasible, and to appropriately mitigate for impacts.

Response to Comment C5-84

Please refer to the response to the Washington State Department of Fish and Wildlife, Comment W4-8.

Response to Comment C5-85

Based on new studies and stormwater plans, the Final EIS clarifies that impacts from stormwater are expected to be minimal. This is due to the use of enhanced treatment to address turbidity and other water quality concerns, and to guidelines recommending limitations on discharge to surface waters. Please refer to the responses to the Washington State Department of Natural Resources, Comment W3-195 and the Washington State Department of Fish and Wildlife, Comment W4-37.

Response to Comment C5-86

The proposed reconfiguration of up to eight watercourses on the Route 9 site would be independent of proposed stormwater discharges. As described in the Draft EIS, these watercourses are currently piped and/or degraded in terms of

stream course conditions, habitat value, and water quality. Relocation of these watercourses into a consolidated stream/wetland restoration area would provide the potential for improved water quality and habitat conditions. Please refer to Chapter 7 for a more detailed discussion of proposed watercourse relocation and enhancement efforts. Please refer to Appendix 6-J, Summer Season Temperature Effects of Stormwater Ponds on Receiving Streams, for a discussion of measures to reduce stormwater pond thermal effects upon streams.

Response to Comment C5-87

As was noted in Chapter 1 of the Draft EIS, one of the overriding purposes of the Brightwater project is to reduce the frequency and volume of emergency overflows that would occur within the existing system north of Lake Washington and the Sammamish River. Therefore, it is anticipated that with implementation of this project, emergency overflows would be reduced substantially compared to existing or future conditions, thereby minimizing adverse impacts to surface water quality and related adverse affects to aquatic or terrestrial species.

In Chapter 7 of the Final EIS, the text has been revised to indicate that terrestrial species in the vicinity of an emergency overflow discharge to the Sammamish River may be temporarily adversely affected if they are engaged in activities within the surface water of the river. For example, terrestrial species engaged in feeding activity may become temporarily ill from incidental ingestion of surface water contaminated with pathogens. Terrestrial species would likely avoid the area of discharge, thereby minimizing any temporary illness. Death of terrestrial species is not likely to occur. Toxicants in sewage water discharged to the Sammamish River would not be concentrated enough to cause acute toxicity in terrestrial species due to incidental ingestion.

Response to Comment C5-88

The term “cleaner condition” is intended to indicate that, over time, impacts from overflows would be flushed and dispersed by flows from the Sammamish River and through Lake Washington, allowing surface water quality to return to pre-overflow quality. More information on the frequency and water quality impacts of overflows, including the modeled extent of water quality impacts and specific water quality parameters is included in Chapter 6 and Appendix 3-E, Flow Management and Safety Relief Point, of the Final EIS.

Response to Comment C5-89

With safety measures that have been incorporated into the plant design, Brightwater would likely pose no greater risks to water resources than an office park would. Contaminated runoff (containing fecal coliforms, metals, detergents, and process chemicals) that may occur at certain locations will be hydraulically isolated and directed to an isolated sump or be routed to the treatment plant, where it will be fully treated and discharged in the effluent line. The facility would also have spill containment berms to minimize the impacts from accidental chemical spills. Redundant power systems and a bypass line would allow influent to be routed around the plant in the event of a failure. For more information about stormwater treatment on the site, refer to Appendix 6-D, Permanent Stormwater Management at the Treatment Plant Sites. All stormwater treatment will be designed to meet state and federal water quality standards.

C5-89 Comment: What other use could discharge similar amounts of a mixture of pollutants such as fecal coliforms, metals, detergents, and various fluids? The City of Woodinville envisions an office or business park, which could be substantially non-polluting with stormwater control and other mitigations.

C5-90 ***Page 7-107, Section 7.3.3.2 -*** *This section describes Snohomish County salmon habitat management plan rules.*

Comment: This section should also describe City of Woodinville regulatory and management plans and programs for salmon preservation.

Page 7-109, Section 7.3.3.2, Table 7-11. *Table shows and describes the potential impact areas.*

Comment: Add a column showing the proposed replacement area or state somewhere the total replacement area.

Chapter 8 Energy and Natural Resources

General Comments

C5-91 The DEIS is surprisingly non-committal on the installation of facilities for biogas or other energy recovery as compared with numerous public meetings where it was announced that energy generation would be a by-product of Brightwater operation. Section 8.1.1.4 states that on-site generation will be "evaluated." Section 8.2.2.2 states it is an "option that will be considered in the future", and it would be "possible". The same section goes on to say that the County "intends to capture" from Cedar Hills. The FEIS must commit to whether this will occur or not take credit for it.

C5-92 This chapter states the project would achieve a "silver" level for a "Green" building rating. However, it is unclear from the DEIS what this level of sustainability means or what it might provide for the community; or why it should be considered as a positive aspect in a SEPA process identifying environmental impacts. It appears to be a laudable goal, but energy impacts appear on their face to dwarf green building impacts.

C5-93 ***Page 8-10, Section 8.2.2.2 -*** *Energy consumption. The DEIS states that biogas, natural gas, or both are options for consideration "in the future", to provide energy to power boilers and generate electricity.*

The DEIS claims "0" or minimal impact on available regional energy, and states that "King County intends to capture gas from its Cedar Hills regional landfill". Assuming therefore that King County will develop a new energy source, additional information is needed to answer the following questions: Will King County develop the new energy source for Brightwater or for all the treatment plants, with money for the Brightwater project? This money should not be mitigation funds. Will other plants contribute to the development cost of the Cedar Hills gas development? If so, in what proportion? Equally?

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Response to Comment C5-90

Appendix 7-A, Affected Environment: Plants and Animals, of the Final EIS includes a discussion of applicable regulations and management plans and programs for salmon preservation. The Route 9 site is currently within and under the jurisdiction of Snohomish County. Should the site be incorporated into the City of Woodinville in the future, King County would work with the City of Woodinville to obtain all applicable permits and approvals and to address plans and programs for salmon preservation.

Response to Comment C5-91

The Brightwater Treatment Plant would have the ability to generate energy using both diesel generators and turbines, or reciprocating engines, or fuel cells. The diesel generators would provide backup power. The turbines/engines/fuel cells would be able to run on either natural gas or digester gas, and would have a capacity of approximately 6 MW for the 36-mgd plant. The quantity of natural gas consumed would vary as the cogeneration turbines would also be powered by digester gas (up to 700 kW for 36 mgd) under normal operations. Natural gas would be used as a backup energy source to run the entire facility (approximately 5,300 kW or 6,000 kW less 700 kW digester gas) if power were lost from the grid.

The project to capture gas from the Cedar Hills Landfill, scrub the gas, and sell it to Puget Sound Energy would be independent from the Brightwater project. The captured gas would not directly benefit any of King County's treatment plants, nor would the plants contribute to the development of the Cedar Hills gas recovery project. The money to fund this project would come from King County's capital projects fund and would not be Brightwater mitigation money. The landfill gas recovery project would be constructed and operated by an independent contractor. The contractor would sell the power

with the revenue for the sales returning to King County. This is a change from what was stated in the Draft EIS.

Response to Comment C5-92

The goal to achieve a silver rating through the Leadership in Energy and Environmental Design (LEED) process is independent of the SEPA process. It is mentioned in the energy section so the reader knows that King County is committed to building the Brightwater Treatment Plant using sustainable building practices. One of these practices is to design the plant and choose equipment that promotes energy conservation.

Response to Comment C5-93

Please refer to the response to Comment C5-91 of this letter.

C5-93 The DEIS indicates that Cedar Hills regional landfill could provide Brightwater and all other treatment plants with energy. Basically this is trading energy via gas, or fuel cell/ electricity into the regional grid, therefore slowing, or running the power meters in reverse at the treatment plants. This is a good idea, but where will the money come from to do this? Is it all coming from Brightwater and if that is the case how much money is left for other mitigation, or is it mitigation money at all. This information should be clarified.

C5-94 Green development usually is not associated with Coal Fired thermal plants and Nuclear power. The DEIS says that it will consider options for developing more power if needed, using as second choices those sources of power development. This seems inconsistent with green development. These references to potential generation sources of commercial power providers are broad and vague and are meaningless for understanding Brightwater impact on those sources.

C5-95 Section 8.2.2.2, pages 8-12 describe backup power generation capabilities of standby generators. It does not correlate that output to the operational demands of the Brightwater plant. The FEIS should state the ability of the system to operate on standby power for a sustained outage because so much of the effluent is gravity-fed. The FEIS should show that Brightwater would not tolerate spills of untreated or partially treated wastewater due to outages in the commercial grid.

C5-96 Section 8.2.2.2 – pages 8-15. The DEIS states it will meet the NPDES requirement for redundant power sources from separate substations. Has the frequency of both stations being "out" or off-line simultaneously been analyzed as compared to other area substations? Puget Sound Energy has facilities very close to this site and might provide a more secure backup grid. Additional information is needed to determine the most reliable back up power source.

Chapter 9 Environmental Health

General Comment

C5-97 Staff is concerned that hazardous materials inventory not yet done, which kicks it off to design phase. C5-98 Hazardous Materials Protection Plan may be required, which indicates whether the community is adequately protected and Woodinville Fire and Life Safety District (WFLSD) or C5-99 Fire District 7 is properly trained and equipped to respond. WFLSD is Woodinville's fire service and fire marshal, but the City of Woodinville does not have a seat at the table for permit review C5-100 to respond to design proposals. DEIS does not cite proper codes for haz-mat related items.

C5-101 The Brightwater Draft Environmental Impact Statement (DEIS) refers to a proposed wastewater treatment facility that would be located in Snohomish County just north of the City of Woodinville. As such it is not within the Jurisdiction of Woodinville Fire and Life Safety District. Therefore this review of the DEIS does not intend to impose current or future requirements on a project that will not be within the scope of the Fire Marshal's Office contractual obligations to the City of Woodinville. It does intend to give an opinion on the possible issues of this project as those issues relate to the Uniform Fire Code and Uniform Building Code. If the City of Woodinville annexes this area, this relationship would change, as WFLSD and the City of Woodinville would become the underlying jurisdiction.

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Response to Comment C5-94

The Snohomish County Public Utility District would supply the power to Brightwater and would not need to develop new energy sources to do so as described in Chapter 8 of the Final EIS. No coal-fired thermal or nuclear plants would be required. In addition, the Brightwater Treatment Plant would generate electricity using digester gas in cogeneration turbines, reciprocating engines, or fuel cells. The plant would also have the capability to use natural gas to generate power using the equipment mentioned above. Both the reuse of digester gas and the technologies considered to generate power with the digester gas consider sustainability and green technologies.

Response to Comment C5-95

Both a cogeneration facility and a standby emergency generator would be provided at the Brightwater Treatment Plant. The cogeneration facility would be used to supply backup electricity during average wet weather flow if power from the grid was not available. The cogeneration facility would contain gas turbines, reciprocating engines, or fuel cells that would provide electrical power using biogas (gas produced during the treatment plant's anaerobic digestion process that contains mostly methane and carbon dioxide) and natural gas as the fuel sources. It could operate on a sustained basis due to the supply of natural gas.

One standby diesel generator would be provided for backup power to serve essential life and safety needs, including critical lighting and ventilation. In addition to the energy generation capacity described above, a dual feed electrical service would be provided for redundancy and reliability. Snohomish County Public Utility District would supply electrical energy to the site from their Bonneville Power Administration (BPA) SNO-KING substation via two independent 115-kV electrical feeders. The BPA SNO-KING

substation is a major, dual substation with primary power feeds from BPA and auxiliary feeds from Seattle City Light and Puget Sound Energy. This substation is the major electrical substation within Snohomish County. It is considered extremely reliable and coupled with the two independent, high voltage feeders to the plant, would provide redundancy to meet permit requirements for reliability. Additional information on both the cogeneration facility and the emergency generator can be found in the Appendix 3-A, Project Description: Treatment Plant.

Response to Comment C5-96

Please refer to the response to Comment C5-95 of this letter.

Response to Comment C5-97

Please refer to the response to the City of Kenmore, Comment C3-105, regarding the applicability of local codes to hazardous materials. King County recognizes that for facilities proposed to be located within the Woodinville city limits, the City's development review process includes review of compliance with the Uniform Fire Code, among other code provisions. This review is done in conjunction with the Woodinville Fire and Life Safety District.

Please refer to Appendix 3-A, Project Description: Treatment Plant, of the Final EIS for a description of the types and quantities of the materials and chemicals that would be used in the treatment process. A description of the delivery, handling, and storage facilities is also provided in this section. If required by the local building and construction permitting authority, a Hazardous Materials Inventory Statement (HMIS) and Hazardous Materials Management Plan (HMMP) would be developed.

Response to Comment C5-98

Please refer to the response to the Snohomish County Fire District No. 7, Comment S1-2.

Response to Comment C5-99

King County will be meeting with appropriate fire districts, those districts that would serve the Brightwater System, during the end of 2003 and through 2004 to develop a plan for emergency services and hazardous material protection for construction and operation of the plant, conveyance and outfall. Woodinville Fire & Life Safety District and Unincorporated Snohomish County Fire District No. 7 will be among those included in discussions to ensure the proper planning and implementation of the plan.

Response to Comment C5-100

Consistent with Washington State law (WAC 296-155), Snohomish County Code, and King County Code, the identification of potential hazards and plans for emergency response on construction sites would be documented in a Site Specific Health and Safety Plan, prepared by the contractor, reviewed and accepted by Snohomish County. During construction, King County would conduct construction site safety reviews to check that contractors are complying with the provisions of the accepted Site Specific Health and Safety Plan (Wood, personal communication, 2003). If warranted, a Construction Fire Protection Plan would be incorporated as part of the Site Specific Health and Safety Plan. Please refer to the response to Comment C5-97 in this letter.

Wood, Wyatt. 2003. Telephone conversation on June 17, 2003. Construction Manager 3, Inspections and Scheduling. King County Department of Natural Resources and Parks, Wastewater Treatment Division.

Response to Comment C5-101

The EIS acknowledges that the Route 9 site is located within the Maltby Unincorporated Urban Growth Area (UGA) in Snohomish County as well as the City of Woodinville's UGA. A summary of Woodinville fire protection services is presented in Chapter 17 of the Final EIS. Information on the Uniform Fire Code requirements has also been added to Chapter 17.

King County will coordinate with local jurisdictions and emergency service providers during the permitting phase of the project to ensure that service providers have adequate staffing, training, and equipment to respond to emergencies associated with the construction and operation of the Brightwater System. Construction of the Brightwater Treatment Plant would not require local fire department staff onsite to monitor

safety issues. It is not anticipated that additional fire and medical staffing for local emergency service providers will be required as a direct result of the Brightwater operations.

The DEIS does make reference to possible hazards during construction. A project of this size in the City of Woodinville would be required to provide a "construction fire-protection plan" for approval. This plan would include issues of access, temporary fire protection systems application, refueling of internal-combustion-powered equipment, hazardous spills response plan etc. This plan is typically a requirement at the time of application for the building permit. A statement in the DEIS that a construction safety plan will be provided before construction begins should be included.

The DEIS does reflect the intent of the applicant to comply with all requirements of the Uniform Fire Code. It also states that all applicable permits will be applied for. However, the DEIS does not address the question of the amounts of hazardous materials that may exceed the limits of the Uniform Fire Code, referred to as exempt amounts. Should the limits of exempt amounts be exceeded substantial changes in building construction types, secondary containment issues, building ventilation requirements etc, would need to be addressed by the applicant.

The hazardous materials mentioned in the DEIS for storage and use at this site do not constitute a complete or thorough listing. In order to accurately assess all of the hazards for the various materials to be present it would be necessary to have an approved Hazardous Materials Specialist complete a Hazardous Materials Inventory Statement (HMIS) and Hazardous Materials Management Plan (HMMP).

C5-102 The HMIS would need to be completed in accordance with the Uniform Fire Code and would be required to reflect the following.

1. All the hazardous materials and their specific classification,
2. The various hazards of each specific material,
3. The location on site of each material,
4. The amount of the materials present, the type of use for each material etc.

The HMMP would be required so that an understanding and review of the following is available.

1. Storage and use areas,
2. The maximum amount of each material stored or used in each area,
3. The location and sizes of tanks and containers,
4. Location of emergency isolation and mitigation valves,
5. Product conveying piping containing liquids or gases,
6. Storage plan showing the intended storage arrangement.

It is the opinion of the Fire Marshal's Office that it would be entirely appropriate to ask that both a HMIS and HMMP should have been provided for initial review at the time of the DEIS. It is expected that a nearly complete HMIS is possible. Due to the lack of any building design it is likely that a complete HMMP is impossible at this time. However, a HMMP statement showing that consideration is being given to the requirements of both the Uniform Fire Code and the Uniform Building Code would be appropriate.

C5-103 Not addressed in the DEIS is the requirement for all facilities to be in compliance with the Uniform Building Code. It is assumed that all facilities will be subject to review by the building

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Response to Comment C5-102

Please refer to the responses to Comments C5-97 and C5-100 of this letter. Additional information on types and quantities of hazardous materials has been included in Chapter 9 of the Final EIS.

Response to Comment C5-103

Please refer to Chapter 9 of the Final EIS, which explains that the quantities of hazardous materials stored and used would exceed threshold levels established by the Uniform Fire Code and would therefore require permitting from the applicable local fire authority. Such permitting application procedures may require the development of a Hazardous Materials Inventory Statement (HMIS). An HMIS has not been prepared at this time. Also, please refer to the responses to Comments C5-97 and C5-100 in this letter.

C5-103 department having jurisdiction. However, at the minimum, it should be acknowledged by the DEIS that the hazardous materials being stored and used at the Brightwater facilities might drive the more restrictive requirements of the Uniform Building Code. This means that the portions of this facility that store or use the hazardous materials may be required to provide an "H" type occupancy. The final determination for this type of occupancy will be driven from a review of a HMIS.

Chapter 10 Noise and Vibration

General Comments

C5-104 Brightwater construction or operation under Snohomish County regulations may affect current or future incorporated Woodinville. Additional information is needed to determine whether the construction activities would violate City of Woodinville codes or require a City of Woodinville variance.

Noise and Vibration: Some errors and inconsistencies exist. It is hard to tell which is construction noise and which is operations noise. Some noise and time violations would occur during construction, but the impacts are inadequately described. Operations noise is 39 decibels at Edmonds and 50 decibels at Route 9. 50 decibels exceeds Snohomish County standard (43 decibels).

C5-105 Chapter 10, Noise and Vibration, seems to lead the reader to a conclusion that only one construction shift a day will be used to construct this project. Assuming this is correct, additional information is needed to answer the following questions: What hours are planned? Would the work hours be within the construction hours defined by Snohomish County regulations now? The DEIS states: "A variance maybe requested for hours of operation and noise". Is that reference to construction noise, because construction noise is exempt now during daytime hours? This section is all very wordy and needs better clarification.

C5-106 What additional mitigation planning will be in place to handle construction schedule delays, particularly if additional nighttime work shifts are added? Does this mean that regular noise ordinances of various governmental jurisdictions would be impacted too, and how does King County propose to secure variances from those jurisdictions? Additional information is needed to analyze the possibility of nighttime construction.

C5-107 ***Page 10-10, Section 10.1.3 -*** *" King County may find it necessary to request variances from regulations, both for work hours and noise levels for construction activities".*

Comment: Under what circumstances would Brightwater request a variance? What public forum is available to provide public input on such a variance? Snohomish County noise regulations allow high noise for short durations during the night hours. This information is found by reviewing table 10-3 and the short text preceding it. In theory, night time residences could, have impacts higher than day time limits, i.e. slamming dump truck boxes for 1.5 minutes every hour all night, [if more work shifts are used]. While it is possible that these impacts could take place without a variance, such noise would still constitute a significant impact that would need to

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Response to Comment C5-104

No noise code violations will occur as a result of construction or operation. Construction and operation of the facilities is intended to be in conformance with all noise codes, including the City of Woodinville and Snohomish County. Construction contract requirements and operating noise mitigation incorporated in the design phase will prevent noise violations. More detailed requirements are described in Chapter 10 of the Final EIS, including specifications of noise limits for certain construction equipment and contractor requirements to meet specific noise codes. Also, please refer to the response to the Snohomish County Planning and Development Services, Comment S3-133.

Construction noise is discussed separately from operation noise in Appendix 10-A, Noise and Vibration: Treatment Plant. The current published Snohomish County Code, Title 10, Chapter 10.01, Noise Control, indicates that noise sources on industrial land use areas may not produce continuous noise levels in excess of 50 dBA on residential land use during the hours of 10 p.m. to 7 a.m. The code requirement is based on determination of the designated land uses of the source and of the sensitive receptors. The nearest sensitive receiving properties are in residential land use areas. The Brightwater Treatment Plant would be located within the industrial land use as defined in the Snohomish County Code. Therefore, operations noise of 50 dBA would not exceed the Snohomish County Code.

Response to Comment C5-105

Construction activities will meet the requirements of the Snohomish County noise code. If a contractor wants to extend hours outside the construction hours allowed in the code, then an exemption permit request and consideration must be exercised. If an exemption permit is not granted, the contractor cannot extend construction hours outside of the hours allowed by the code. Daytime hours of 7 a.m. to 10 p.m. are exempt from noise regulation of construction

activities in Snohomish County Code, Article 10.01.050 (2)(a). If an exemption permit is required, construction noise levels under the exemption permit will be the same as noise levels allowed for industrial noise source land use in the same time period. This will limit the construction activities or require appropriate noise mitigation during those hours outside of exempt hours, should an exemption permit be granted.

Appendix 10-A, Noise and Vibration: Treatment Plant, of the Final EIS has been modified to describe the exemption permit process and accompanying conditions.

Response to Comment C5-106

It is probable that nighttime construction would take place at primary portal siting locations for the conveyance facilities, if permitted by the jurisdiction. Construction outside of the exempt daytime noise period from 7 a.m. to 10 p.m., which could result from construction schedule delays, would only be considered through the exemption permit process. The Snohomish County Code, 10.01, Noise Control, Section 10.01.050, includes a process for application and consideration of a “Public Disturbance Exemption Permit”, which could be exercised for construction activities outside of the exempt daytime hours. The exemption permit process provides for posting and notification of adjacent property owners, to solicit comments on the application. The administrator would follow the Code for consideration of public comments.

Response to Comment C5-107

Please refer to the response to Comment C5-105 of this letter. Refer to Chapter 3 of the Final EIS for a description of the construction schedule and sequence.

C5-107 be mitigated. With nearby residential land use, this noise, unmitigated, would be unacceptable. More information is needed on the proposed methods of mitigating this impact before it can be properly analyzed.

C5-108 ***Page 10-12, Section 10.2.2.1, first paragraph -****Construction noise impact can be " 83-85 dbA 100' away. The DEIS states this on page 10-13 last paragraph: Nearest residence to the east is 700', and to the west 100'. The west residence wills likely experience 83-85 dbA.*

Comment: This is a 60% increase in noise, allowed by Snohomish County regulations and referenced on DEIS table 10-3, above normal non-construction noise levels.

Additional comment: Apparently there are no Snohomish County vibration regulations. Although that could well be a source of future complaints while pile driving is underway. No mitigation is mentioned for vibration, either during construction or plant operations.

C5-109 ***Page 10-15, Section 10.2.2.2*** *- This section states Snohomish County regulations for nighttime operations allow 42 dbA on residential and 39 dbA on rural receiving properties. The plant operation will produce 45-50 dbA. There are some indications that distance to residential or rural properties would minimize noise on the receiving properties.*

Comment: Depending on how the receiving property is zoned, the new source noise with plant operation will either be 8% or 11% higher than allowed. For example the residential property 100' to the west is easily within the noise impact area. The DEIS states that this would be masked by highway noise. That maybe true during heavy day and early evening hours, but perhaps not during late and early morning hours. The plant should be designed to meet the existing regulations. Known and reasonable technologies exist to reduce such noise.

Page 10-20, Section 10.3.1.2 - *Operations: "The treatment plant would be designed to operate at the noise levels at or below the most stringent nighttime noise levels of the respective jurisdictions a the nearest sensitive receptor. –39 dbA Unocal site, and 50 dbA at the Route 9 site".*

Comment: There are three problems with this DEIS statement as follows:

1) The most stringent Snohomish County requirement is 39 dbA using table 10-3. Page 10-4 at the Route 9 site, if any rural properties are impacted. Earlier the DEIS said they would not be able to meet the most stringent nighttime sound restrictions and would operate at 50 dbA. This inconsistency must be addressed and dbA ratings brought within code.

2) If they can meet 39 daA at Unocal, why not at Route 9? Again, there are incompatible land use issues with nearby residential land uses that appear to be ignored.

C5-110 3) Earlier in the DEIS in section 10.2.1 "Assumptions included the following: Noise levels, due to project operation, at the property line of the sensitive receptor, will not exceed the most stringent nighttime noise level limits of the applicable codes. This will be the result of mitigation to meet the legal limits". Does this mean that regular noise ordinances of various governmental

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Response to Comment C5-108

Residential land uses 100 feet west of construction activity noise could be subject to peak noise levels of 85 dBA during the daytime hours of 7 a.m. to 10 p.m. This has been identified as an impact and mitigation is summarized in the Impact Summary table in Chapter 10 of the Final EIS. Also, please refer to the response to the Snohomish County Planning and Development Services, Comment S3-133.

Specific mitigation of vibration from construction activities and operation has been added to the Final EIS. Vibratory or sonic type pile driving is the only practical mitigation available for pile driving and could reduce transmitted vibration to at least half of the levels resulting from impact pile driving according to U.S. Department of Transportation, Federal Railroad Administration, Office of Railroad Development, *High-speed Ground Transportation Noise and Vibration Impact Assessment* (December 1998). Other construction activities with vibration impacts, such as excavation and truck movement, will have lower impacts than pile driving and can only be partially mitigated by limiting the time-of-day of occurrences and the proximity to sensitive structures on residential land uses. Operational vibration impacts will be mitigated by isolation of process equipment vibratory forces from structure foundations. Reciprocating engines for onsite power generation will also be installed on heavy inertial foundations for mitigation of vibration transmission to the ground.

Response to Comment C5-109

The Snohomish County noise code requirements referenced in Section 10.2.2.2, of the Draft EIS require nighttime noise limits of 42 dBA and 39 dBA for a noise source land use of residential and rural, respectively. As noted in the response to Comment C5-104 of this letter, the Brightwater treatment facilities will conform to the definition of industrial land use in the code, and not residential. The nearest noise sensitive land uses are residential and the Snohomish County noise

code requires a 50 dBA noise level limit for this receiving land use, from an industrial land use source. The plant operational noise would be controlled by design to meet the Snohomish County regulations; the technologies to achieve these levels are described in Appendix 10-A, Noise and Vibration: Treatment Plant, of the Final EIS. Please refer to the response to the Snohomish County Planning and Development Services, Comment S3-132, which addresses the control of specific contributing process equipment noise.

The Final EIS text has been revised to describe nighttime noise levels required by the applicable codes for residential receiving land uses and industrial source land uses. The 39 dBA operational noise level design criterion was established for the Unocal site as a 5 dBA limited increase in the existing minimum ambient noise level. This was established because the minimum ambient noise level at the Unocal site (34 dBA) is below the 50 dBA noise level allowed by the Edmonds Municipal code. For the Final EIS, this same approach has been applied to the Route 9 site, but still results in an operational noise level design criteria of 50 dBA, which is 5 dBA above the minimum measured ambient noise level of 45 dBA. This is because the treatment plant operation does not have the ability to reduce ambient noise levels.

Response to Comment C5-110

Please refer to the response to Comment C5-109 of this letter. The Final EIS text has been revised to note that no exemption permit is needed for operational noise levels at the Route 9 site. Noise ordinances of the various jurisdictions would not be exceeded for operation of the Brightwater facilities.

C5-110 jurisdictions would be impacted too, and how does King County propose to secure variances from those jurisdictions?

Chapter 11 Land and Shoreline Use

C5-111 ***Page 11-2, Section 11.1.1.1*** *- Intergovernmental coordination is an important part of growth management. The GMA requires that "the comprehensive plan of each county or city that is adopted pursuant to RCW 36.70A.040 shall be coordinated with, and consistent with, the adopted comprehensive plans of other counties or cities with which the county or city has, in part, common borders or related regional issues." On page 11-9 there is mention of the City of Woodinville's comprehensive plan's policies for siting of essential public facilities.*

Comment: There is no reference in the DEIS that the City of Woodinville Comprehensive Plan has been reviewed. Discussion of other compatibility factors should be included. For instance, Comprehensive Plan policies to preserve commercial lands for commercial uses and annexation of the Grace UGA must be discussed for the FEIS to be potentially considered complete.

C5-112 ***Page 11-9, Section 11.1.15*** *- Snohomish County EPF siting Factor 10 reads: The project should be compatible with surrounding landuse.*

Comment: Surrounding land use in Woodinville includes single family residential, park and open space and industrial. The DEIS should explain how it is compatible with these land uses. The DEIS does not address these land uses or existing planning documents.

C5-113 ***Page 11-9, Section 11.1.15*** *- The majority of the Route 9 site is located within the Maltby unincorporated urban growth area for Snohomish County and the urban growth area for the City of Woodinville.*

Comment: Because these areas overlap and are an established joint planning area for Snohomish County and the City of Woodinville, comprehensive plan policies for the City of Woodinville are discussed. Due to the joint planning area, the FEIS should thoroughly address impacts to the City of Woodinville plans and environment, just as the DEIS addresses impacts to areas of Snohomish and King Counties.

C5-114 ***Page 11-14, Section 11.1.2.2*** *- "As part of a subarea plan for this area, the City of Woodinville is currently working with Snohomish County to include the Grace Neighborhood within the Snohomish County UGA. This would occur through the annexation process."*

Comment: This statement sounds incorrect. Is it intended to say: "As part of a subarea plan for this area, the City of Woodinville is currently working with Snohomish County to include the Grace Neighborhood within the ~~Snohomish County~~ City of Woodinville. ~~UGA.~~ This would occur through an interlocal agreement for joint planning and annexation process.

C5-115 ***Page 11-15, Section 11.1.2.2*** *- Shoreline Master Program designations for Snohomish County are provided.*

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Response to Comment C5-111

A discussion of existing land use and Woodinville's Comprehensive Plan policies as they relate to Brightwater was included in Chapter 11 in the Draft EIS and under the Regulatory Environment and Impacts and Mitigation sections in the Final EIS. It includes a discussion of both Snohomish County and City of Woodinville Comprehensive Plan policies relating to the current comprehensive plan designations for the Route 9 site, Urban Growth Areas, annexation, and siting of essential public facilities.

Response to Comment C5-112

Please refer to the response to Comment C5-111 of this letter.

Response to Comment C5-113

Please refer to the response to Comment C5-111 of this letter. The analysis of impacts related to the Route 9 site has been revised in the Final EIS to include a more detailed discussion of land use compatibility with the City of Woodinville Comprehensive Plan and Municipal Code. This new information is included in Chapter 11 of the Final EIS.

Response to Comment C5-114

Thank you for your comment. The referenced text has been changed to reflect these and other edits.

Response to Comment C5-115

Shoreline Master Programs are only discussed when there is a potential for Brightwater to impact shorelines. The portion of Little Bear Creek and its tributary that are affected by the Route 9 site are both located outside the City of Woodinville's Urban Growth Area, and neither of these streams is large enough to be regulated by a Shoreline Master Program.

C5-115 Comment: Shoreline Master Program designations and regulations for the City of Woodinville should also be included.

C5-116 ***Page 11-35, Section 11.2.2.1 -*** *Snohomish County EPF siting factor 3 – "The EPF should demonstrate its relationship to local, regional, and state plan, and should be consistent with the adopted plans of the host community."*

Comment: Woodinville is the logical "host community." As such, the FEIS should further assess how the facility impacts and meets consistency factors. For instance, the City of Woodinville has comprehensive plan policies to preserve commercial lands for commercial uses.

C5-117 ***Page 11-41, Section 11.2.2.1 -*** *"If the Route 9 site were annexed by the City of Woodinville in the future, a wastewater treatment plant would be consistent with the City's proposed land use and zoning for the site. Regional public facilities are permitted within the industrial zone and would require a special use permit."*

Comment: Although essential public facilities are permitted in the Industrial zone, the "consistency" of such a facility with City of Woodinville plans would include significantly more thought and balancing of policies than simply consistency of permitted uses through zoning. Some of these other factors would include consistency with other plans, codes and compatibility of adjacent uses.

C5-118 ***Page 11-61, Section 11.4.1 -*** *Development at the Route 9 site would preclude development of the bus barn that is currently proposed on a portion of the site that is owned by the Northshore School District.*

Comment: Development at the Route 9 site would also preclude future commercial uses that would provide jobs, tax revenues and economic development for the City of Woodinville and Snohomish County.

Chapter 12 Aesthetics

C5-119 General Comment: As is the case with other topic areas, the DEIS fails to consider compatibility of the Brightwater treatment plant with City of Woodinville aesthetic considerations. These include the City's design guidelines, which emphasize local preferences for a "northwest woodland character." The City of Woodinville strives to incorporate quality design elements into new construction. This is another example of how interlocal planning for a potential annexation area should be identifying such compatibility factors and committing to seeking accommodation during the design of significant facilities that may ultimately transfer to another jurisdiction. The FEIS should address these aesthetic compatibility issues and planning solutions that emphasize interlocal cooperation.

C5-120 ***Page 12-2, Section 12.1.1 -*** *The DEIS states that "Aesthetic standards for development of the Route 9 site, including height, bulk, articulation, and setbacks for new construction, are found in the Snohomish County Code, Title 18."*

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Response to Comment C5-116

Please refer to the responses to Comments C5-3 and C5-24 of this letter.

Response to Comment C5-117

Although Brightwater is classified as an Essential Public Facility, it also meets the intent of industrial zone that is "to provide for the location and grouping of enterprises and activities involving manufacturing, assembly, fabrication, processing, bulk handling and storage, research facilities, warehousing and heavy trucking" (WMC 21.04.130). Brightwater would also be compatible with adjacent industrial uses in the project vicinity.

Response to Comment C5-118

Please refer to the response to Comments C5-14 and C5-24 in this letter.

Response to Comment C5-119

Although the Route 9 site is located within the City of Woodinville Urban Growth Area, the site cannot be "governed" by the City's codes and standards until the area is annexed into the City. King County has directed its design team for the Route 9 site to apply the appropriate City of Woodinville aesthetic and community design standards, in addition to the Snohomish County standards, to the project, site, and facility design.

As an industrially zoned property within Woodinville's UGA, the proposed facility will meet or exceed the industrial land use goals for the area and exceed buffering standards for industrial land uses as it has an average of 300 feet of perimeter area available for buffering treatments along its entire Route 9 frontage. This capacity to mitigate aesthetic and visual impacts would enable the Brightwater Treatment Plant to contribute in many ways to Woodinville and Snohomish County goals for this important crossroads area: the treatment plant would be a gateway or portal node for this

area and contribute to the character and image expectations set for it by the City of Woodinville and Snohomish County.

The Final EIS evaluates the consistency of Brightwater with City of Woodinville design and aesthetic standards as found in:

1. Woodinville Municipal Code Chapter 21. Zoning Code: Chapter 21.12 Development Standards. Principal standards are for setbacks (25 to 50 feet depending on land use and/or roadway rights-of-way adjacency), building height (45 feet without variance), and landscape requirements (10 to 20 feet of either Type I [full screen - visual barrier] or II landscaping [filtered screen - visual separator]).

2. City of Woodinville Industrial Design Guidelines; IV Building Design, 1.0 Community Scale, Architectural Scale, 3.0 Human Scale, 4.0 Building Details, 5.0 Materials, 6.0 Blank Walls, and 7.0 Mechanical Equipment and Service Areas; V. Landscape and Site Design, 1.0 Landscape Concept, 2.0 Preferred Plant Materials, 3.0 Parking Lot Landscaping, 4.0 Retention of Significant Trees, and 5.0 Site Lighting

Please refer to Chapter 12 for additional analysis and refined design concepts at the Route 9 site.

Response to Comment C5-120

Please refer to the response to Comment C5-119 of this letter.

Comment: To be consistent with the GMA on compatibility of plans for neighboring jurisdictions with common borders, PAA's or regional issues, this section should include aesthetic standards found in City of Woodinville Design Guidelines for industrial zones. Due to the adjacent incompatible use of rural residential and the identified "office park overlay", the City of Woodinville design guidelines commercial and residential zones should be consulted to create the maximum compatibility.

Page 12-10, Section 12.2.1 - *The DEIS states that aesthetic impacts are analyzed by "identifying and analyzing aesthetic impacts generated by the treatment plant in relation to the local jurisdiction's regulatory standards governing aesthetics and design."*

Comment: This analysis should include City of Woodinville regulatory and design standards.

Page 12-14, Section 12.2.2.2 - *The DEIS states that "Standards, including height, bulk, articulation, setbacks, and landscaping for new construction, are found in the Snohomish County Code, Title 18. Examination of the proposed facility layout in context to surrounding uses and zoning indicate consistency with the regulations regarding aesthetic issues."*

Comment: Consistency of the proposed facility with City of Woodinville standards should be included in the analysis.

C5-120 ***Page 12-25, Section 12.3.1.2*** *- This section lists possible mitigation measures to reduce the scale of the Route 9 treatment plant. These measures should include City of Woodinville regulations and design guidelines.*

Chapter 13 Light and Glare

C5-121 ***Page 13-1 Section 13.1.1*** *- This section states "local development codes were reviewed to identify requirements related to light and glare."*

Comment: City of Woodinville codes should be included in this review. The nearby incompatible use of rural residential needs to be taken into account as the site is located on the valley floor and many properties with valley vistas would be affected by inappropriate light and glare.

Chapter 14 Recreation

General Comment

C5-122 The Brightwater Site – Route 9 Alternative lies outside the City Limits of Woodinville but within the park, recreation and open space service area adopted by Woodinville in the City's Park, Recreation and Open Space Plan (PRO Plan), 1998. The 1000 foot wide conveyance corridor for Route 9 passes through the northwest corner of the City near 130th Avenue NE. and NE. 205th Street.

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Response to Comment C5-121

The City of Woodinville light and glare regulations have been included in the list of referenced Codes included in the Final EIS text. The proposed area lighting will comply with the City's regulations.

Response to Comment C5-122

Chapter 14 of the Final EIS has been revised to include a discussion of the City of Woodinville's park, recreation, and open space service area boundary. Other chapters of the Final EIS acknowledge that the 1,000-foot conveyance corridors for both the Route 9-195th and 228th Street Systems fall within the northwest city boundary of Woodinville, and these chapters evaluate impacts and mitigation as a result of construction within Woodinville.

C5-123 ***Page 14-3, Section 14.1.1.2*** *-The DEIS states there "no public recreational facilities are located on the Route 9 site. It contains parcels that are held by a number of private land owners and includes industrial and commercial land uses and a community grange hall."*

Comment: More information regarding the "community grange hall" is needed. Does this facility provide recreational or other public services? What would be the impact of the Route 9 treatment plant on this resource? How would any impact to this resource be mitigated?

C5-124 ***Page 14-4, Section 14.1.1.2*** *- The DEIS says that no parks or trails are proposed within one mile of the Route 9 site in either unincorporated Snohomish County or Woodinville .*

Comment. This is incorrect. The PRO Plan proposes that Wellington Hills Golf Course will provide resource conservancy activities (picnicking, wildlife viewing, trails), a playground, athletic fields and a recreation center in the future (see Chapter 8.1 & 8.3 PRO Plan). The Wellington Hills Golf Course is located approximately 1000 feet southeast of the proposed Route 9 treatment plant site.

In addition, existing and proposed on-road bicycle touring routes are located on both shoulders of the Woodinville-Snohomish County Road (Rt. 9) adjacent to the Route 9 Alternative Treatment Plant site, and on 228th Street East (see 8.8 PRO Plan). A resource conservancy (wildlife) corridor and hiking trail is also proposed along Little Bear Creek adjacent to the Woodinville-Snohomish Road. This trail is part of the PRO Plan proposed Little Bear Creek Linear Trail system that extends from the Sammamish River Park and Trail at the Sammamish River north to the northern limits of Little Bear Creek in Snohomish County (see 8.6 PRO Plan). And, a multipurpose trail is proposed along the SLS&ERR railroad tracks adjacent to the Eastern boundary of the proposed Route 9 Treatment Plant site (see 8.9 PRO Plan). This site is also within one mile of the Route 9 Treatment Plant site. The FEIS should analyze and acknowledge these plans, take care not to disrupt them with plant siting or impacts and should seek to enhance these plans if this is selected as the final location.

Figure 14-2 *- The 195th Street Corridor passes near the Northwest corner of the Woodinville High School campus, which contains a gym, athletic fields, tennis courts, classrooms and other recreation amenities that the City of Woodinville frequently uses through inter-local agreements with the Northshore School District.*

Comment: The City's use of these facilities should warrant inclusion of the High School site in the recreation impacts discussion of the DEIS. Also, the City's resource conservancy park currently in final design and scheduled for phase 1 construction in 2003 will double as an outdoor classroom and should not be subject to any negative impacts from a wastewater treatment plant.

C5-125 ***Page 14-12, Section 14.2.2.1 and 14.2.2.2*** *- The DEIS states that the Route 9 Treatment Plant site construction and operations activities will not affect the Wellington Hills recreation resource due to its distance away from the proposed Route 9 Treatment Plant site.*

Comment: This distance is about 1000 feet. Winds originating out of the Northwest in the summers are funneled through this area. Has this been studied thoroughly, and will this

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Response to Comment C5-123

Please refer to the response to the Snohomish County Planning and Development Services, Comment S3-145.

Response to Comment C5-124

Chapter 14 of the Final EIS has been revised to include additional information on proposed amenities at the Wellington Hills Golf Course; the proposed Seattle, Lake Shore and Eastern Railroad (SLS&E) trail; the proposed Little Bear Creek Trail Corridor and Neighborhood Trail System (which extends south of Wellington Hills Golf Course); and the proposed Little Bear Creek Lineal Park.

The Washington State Department of Transportation is currently planning improvements along SR-9, directly adjacent to the Route 9 site that would include road widening. After completion of the project, the SR-9 shoulder would be designated as a Class IV Bikeway (refer to Chapter 16 of the Final EIS).

Although the proposed 195th Street Corridor passes near the Woodinville High School campus, the conveyance pipeline near this area would be buried at depths ranging from 45 to 450 feet deep. Construction activities associated with this portion of the tunnel would occur at Portal 41 where the tunnel boring machine (TBM) would be launched and at the Route 9 site where the TBM and spoils would be retrieved. As described in the Draft EIS analysis, minimal to no aboveground impacts to school operations are expected from construction-related noise, ground disturbance, dust, or odor. Similar to Woodinville High School, the City of Woodinville's Resource Conservancy Park is not expected to discern impacts from construction of the conveyance pipeline. Refer to Chapter 5 and Chapter 10 of the Final EIS for a discussion of odor and noise impacts from construction to surrounding properties.

Response to Comment C5-125

Odors would be below detection thresholds outside of the plant property line for the proposed 36- and 54- (Route 9 and Unocal), or 72-mgd (Unocal sub-alternative only) capacity even during peak odor events, and, therefore, the plant would not smell.

Sensitive receptors are identified in this Final EIS in order to acknowledge the presence of people that may have compromised respiratory systems in the vicinity of the proposed wastewater treatment plant. People with compromised respiratory systems may be more sensitive to air pollutants that may or may not be odorous. The term “sensitive receptor” is not meant to be applied to those who are more likely to detect an odor.

The Final EIS modeling includes additional receptor points at “sensitive receptors” such as schools, parks, hospitals, retirement homes, senior citizen, and daycare centers. For the Unocal site there are also multiple receptors in the vicinity of the ferry terminal and on the lid of the multimodal facility. Appendix 5-A, Odor and Air Quality: Treatment Plant, of the Final EIS includes a table of added receptor points for sensitive receptor locations. The table includes the following:

- Woodway Elementary School
- Landing Retirement Center
- Kokanee Elementary School

Areas that are not specifically for seniors or children, such as the Olympic Apartments, or locations where sensitive individuals would typically not spend a significant amount of time each year, such as the Wellington Hills recreational area located in the vicinity of the Route 9 site, were not included in the list of added sensitive receptors. However, with receptors located every 330 feet, there is a receptor near all of these locations, and if all of the receptor points are below the significant impact level, then the areas in between the receptor points are also below the significant impact level.

C5-125 phenomena produce dust, odor and noise at Wellington Hills? More information is needed to analyze the validity of this claim.

C5-126 There is also no mention of the impacts to the Little Bear Creek Linear Park System referred to above in the Route 9 site discussion. As part of the linear trail system, the City of Woodinville is currently preparing to begin construction of a multi-use skate park in conjunction with an eighteen-acre resource activities park containing wetland mitigation areas. This park is located just east of Woodinville High School between 136th Avenue NE and SR 522, adjacent to the north side of NE 195th Street. The resource park area was conceived as an outdoor classroom and should be free from impacts of a wastewater plant. This proposed park has not been mentioned in the DEIS. Additional information is needed to analyze the following questions: Will there be any potential construction impacts to this park or associated wetlands as a result of potential impacts to up-stream segments of Little Bear Creek? Have noise, odor and dust impacts been considered for the area of this park site?

Chapter 15 Cultural Resources

C5-127 ***Page 15-1 and 15-2, Section 15.1*** *- The DEIS states that the City of Woodinville was one of the consulted cities "to determine if buildings of local importance were in the project area."*

Comment: As far as can be ascertained, the City has not been consulted as described. There is a cultural resources study being performed for the aforementioned park that should be reviewed and expanded upon in the FEIS.

C5-128 ***Page 15-3 Section 15.1.1.3*** *- The DEIS states that "King and Snohomish Counties and several cities within the project area have passed ordinances that govern management of archaeological sites, and historic buildings and historic structures."*

Comment: The DEIS includes mention of City of Woodinville ordinances governing historic resources. The potential impact of the Brightwater project on other City of Woodinville plans, codes, and issues should also be addressed in relevant chapters of the DEIS.

C5-129 ***Page 15-21, Section 15.3.1.1*** *- This section describes mitigation measures for the treatment plant sites. One of these measures is to "Develop archaeological treatment and monitoring plans to address inadvertent discovery of significant archaeological resources in areas with a moderate to high probability for possibly significant archaeological deposits in area in the preferred treatment plant site."*

Comment: The FEIS should state when these plans should be developed and what process will be put into place for public review of the findings.

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Response to Comment C5-126

Chapter 14 of the Final EIS has been revised to include a discussion of the City of Woodinville proposed Little Bear Creek Linear Park Master Plan as outlined in the Draft Downtown and Little Bear Creek Corridor Master Plan.

Response to Comment C5-127

In response to the comment, King County's consultant telephoned Ray Sturtz, Community Development Director, City of Woodinville on June 12, 2003, to discuss historic buildings in the City of Woodinville. Mr. Sturtz said that the City of Woodinville relies on the King County Historic Preservation Program to maintain a list of historic buildings, structures and sites, and to provide technical advice when needed. Mr. Sturtz also said that he relies on the Woodinville Historical Society when he needs historical information relating to projects under department review. Mr. Sturtz described current efforts by the City of Woodinville to preserve the Woodinville Grade School.

King County completed the *City of Woodinville Park Master Plan Archaeological Resources and Traditional Cultural Use Assessment, King County, Washington* in February 2003 (LAAS, 2003). No significant archaeological resources were identified in the City of Woodinville Park Master Plan project area. An area of high probability for archaeological resources (indicated by a subsurface peat layer) was identified, and a professional archaeologist is currently monitoring construction excavation. The City of Woodinville Park Master Plan project area is on the west bank of Little Bear Creek, one mile east of Portal 41 and one mile southwest of the Route 9 treatment plant site.

Reference:

Sturtz, Ray, Community Development Director, City of Woodinville. Personal communication, telephone

conversation with Leonard Forsman, Larson Archaeological Anthropological Services, June 12, 2003.

Response to Comment C5-128

City of Woodinville plans and policies have been added to Chapter 11 of the Final EIS and Appendix 11-A, Land Use Plans and Policies: Brightwater Regional Wastewater Treatment System.

Response to Comment C5-129

King County will develop archaeological treatment and monitoring plans after archaeological fieldwork is conducted during the design and pre-design phases. The archaeological treatment and monitoring plans will be reviewed by the State of Washington's Office of Archaeology and Historic Preservation, the affected Tribes, and King County. The archaeological treatment and monitoring plans will include sensitive archaeological information, which is protected against public dissemination. This information is available upon request by permitting agencies and relevant jurisdictions.

Chapter 16 Transportation

General Comments

C5-130 The Brightwater DEIS, Chapter 16 – Transportation, is in large part very vague and neglected to discuss impacts to the City of Woodinville. There were several courtesy mentions of the City as an adjoining agency but failed to discuss or address impacts to the City's transportation system.

C5-131 The information provided lacks supporting information, clarity and detail. No trip distribution maps for local roadway systems were provided. No in-depth analysis for the trip generation was provided and the information provided for the trip generation were at best an elementary guess with no defined basis. Additional information of this type is needed to properly analyze transportation impacts.

C5-132 No mitigation analysis was provided to address the direct and indirect socio-economic impacts to the adjoining agencies. At best, Chapter 16 mentions the impacts caused by its action but fails to address how to mitigate the problem.

C5-133 The traffic study does not assume any use of City of Woodinville streets. With suppliers, services and employee housing in the area, along with peak hour tie-ups in the Grace area, the use of the 195th interchange and Woodinville-Snohomish corridor are inevitable. The impacts to these and other City of Woodinville streets should be fully described and mitigated.

Page 16.1, Section 16.1 Paragraph 1 line 1

Comment: The report mentioned local transportation systems but ignores impacts upon the City of Woodinville caused by the project.

Page 16-5, Section 16.1.1.2

C5-134 Comment: The report omitted LOS requirements for City of Woodinville. This is important to establish the minimums for the City and whether additional mitigation may be required if the projects causes the City's transportation system to degrade. This analysis should be performed and mitigation should be provided accordingly.

Page 16-5, Section 16.1.1.2

Comment: The report fails to discuss mitigation recourse and options if the City's transportation system LOS degrades by an actual level of service.

C5-135 ***Page 16-11, Section 16.1.2.2, Paragraph 1-5***

Comment: The report neglected to identify Woodinville-Snohomish Road, NE 195th St. (in Woodinville) and Woodinville-Duvall Road corridors as part of the transportation systems in the vicinity of the proposed treatment plant that could be adversely impacted.

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Response to Comment C5-130

The operation of the treatment plant at the Route 9 site is not expected to impact the City of Woodinville transportation system. Development of the Brightwater Treatment Plant at the Route 9 site would displace existing land uses that currently generate more trips than the proposed project. Also, impacts to the City of Woodinville transportation system related to Route 9 site construction would be expected to be minimal. Please refer to Appendix 16-B, Transportation Impact: Plant Sites and Conveyance, of the Final EIS for greater detail.

Response to Comment C5-131

Additional detailed traffic evaluation has been conducted as part of the Final EIS. Chapter 16 and Appendix 16-B, Transportation Impacts: Plant Sites and Conveyance, of the Final EIS provide the results of this evaluation.

Response to Comment C5-132

Please refer to the response to Comment C5-14 in this letter regarding economic issues.

Response to Comment C5-133

Please refer to the response to the City of Woodinville, Comment C5-130. The trip origins for Brightwater construction are anticipated to be distributed throughout the region. Very small levels of traffic would originate from the 195th interchange area. Proposed project trip generation, distribution of workers and delivery materials, and necessary mitigation measures were summarized and illustrated in Appendix 16-B, Transportation Impact: Plant Sites and Conveyance, of the Final EIS.

Response to Comment C5-134

Please refer to the response to Comment C5-130 in this letter. The City's level-of-service (LOS) requirements are included in the Final EIS. Please refer to Chapter 16 of the Final EIS

for LOS standards by jurisdiction. A more detailed analysis of traffic impacts at portals, pump stations, and the treatment plant site during construction, operation and management conditions has been completed and is included in Appendix 16-B, Transportation Impact: Plant Sites and Conveyance, of the Final EIS.

Response to Comment C5-135

Please refer to the response to Comments C5-130 and C5-133 in this letter. The major access routes for construction of the Route 9-195th Street corridor option and the Route 9-228th Street corridor option include I-5, I-405, SR-104, SR-522, and SR-9. Background traffic volumes along these routes were prepared and are presented in the Final EIS. Please refer to Chapter 16 of the Final EIS for construction access routes and represented traffic volumes.

Page 16-11, Section 16.1.2.2, Paragraph 1-5

Comment: The report failed to mention any of the roadway systems south of SR 9 MP 0.00 regardless whether local or regional. The roadways to the south are heavily used and depended upon by both local and regional traffic. For example, SR 9 ties into Woodinville-Snohomish Road, which in turn ties into Woodinville-Duvall Road, which provides the only primary east-west access to east King County south of Snohomish County. These roadways are also used as delivery routes for construction materials, i.e. fill and rock.

Page 16-11, Section 16.1.2.2, Paragraph 7

Comment: No traffic volumes were provided for Woodinville-Snohomish Road, NE 195th St. (in Woodinville) and Woodinville-Duvall Road corridors and the roadway system south of SR 9, MP 0.00. The traffic volumes would help establish the baselines for the amount of traffic using these roadways. This information should be provided.

Page 16-12, Section 16.1.2.2, Accident Experience

C5-135 Comment: No accident experience was provided for Woodinville-Snohomish Road, NE 195th St. (in Woodinville) and Woodinville-Duvall Road corridors and the roadway system south of SR 9, MP 0.00. The accident experience would help establish the baselines for the amount and types of accidents that are occurring on these roadways. This information should be provided.

Page 16-13, Section 16.1.2.2, Truck Traffic

C5-136 Comment: The truck traffic percentage reported appears low. Additional information needs to be provided to verify the source and the accuracy of the assumptions. The truck percentage would establish the baselines to identify the dependency of commercial traffic on these roadways and how the local economic engine would be impacted.

C5-137 ***Figure 16.7***

Comment: Effluent corridors are not clearly identified and delineated.

Page 16-14, Section 16.1.3

C5-138 Comment: The word "corridor" is being used interchangeably for both traffic and effluent. The liberal use of the word may lead to confusion and misinterpretation.

Page 16-28, Section 16.2.1.1, Paragraph 5

C5-139 Comment: The report needs to look at local agencies' traffic models in addition to the PSRC traffic model to assess both micro and macro level of growth analysis. An overly large regional traffic model that does not address local growth would not provide accurate information.

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Response to Comment C5-136

Updated truck percentage information was assembled from the most recent WSDOT 2002 *Annual Traffic Report* at locations along SR-522 and SR-9 and is summarized in Chapter 16 of the Final EIS.

Response to Comment C5-137

Figure 16-7 of the Draft EIS shows Existing Traffic Conditions for the entire project area. Refer to Chapter 16 of the Final EIS for updated figures.

Response to Comment C5-138

Chapter 16 of the Final EIS has been revised to make traffic corridors and effluent corridors more clear and distinct.

Response to Comment C5-139

The PSRC model is accurate enough to determine transportation impacts because the regional model is comprehensive and includes input from local jurisdictions. The PSRC model should already include the short-range or adopted plans from all jurisdictions within King, Pierce, and Snohomish Counties. The model also allows for consistency across the entire project area. The model is adequate for traffic volume forecasting on the regional transportation system, such as I-5, I-405, and SR-522 because the primary project access routes are on the regional transportation system.

C5-140 ***Page 16-29, Section 16.2.1.2***

Comment: The assumption that PM peak is the critical peak hour without validation through a detailed analysis of the transportation systems for both the corridors and local systems is unacceptable. Peak hour flows are directional and impacts for both directions should be addressed and not only a single direction. The report did not address mitigation for both directions.

C5-141 ***Page 16-30, Section 16.2.1.4***

Comment: The report states that the conflicts with other planned or programmed projects were evaluated. What City of Woodinville, Snohomish County or regional plans were consulted? More information is needed to determine whether the evaluated projects are local, county or state projects. The report did not provide a detailed list of the projects that were evaluated. It is important that the adjoining agencies are aware of the combined impacts to reduce creating a transportation nightmare with public dollars.

C5-142 ***Page 16-31, Section 16.2.1.5***

Comment: No specific routes were identified nor shown on the corresponding map/figure. Specific impacts to the routes need to be identified and shown on the map/figure.

C5-143 ***Page 16-31, Section 16.2.2.1***

Comment: No detailed information was provided for the identified projects. The description was very vague and limited. There was no mention of the Snohomish County project to widen Woodinville-Snohomish Road south of SR 9, MP 0.00.

C5-144 ***Page 16-33, Section 16.2.3***

Comment: No information regarding the basis and assumptions used to develop the trip generation were provided. The proposed number of trips seems too low for a project this size and magnitude. Inaccurate trip generation numbers would create inaccurate reporting of predicted impacts and mitigation. More information regarding the predictive methodology needs to be provided before the impacts can be fully analyzed.

C5-145 ***Page 16-43, Table 16-21 & Table 16-22***

Comment: Woodinville-Snohomish Road, NE 195th St. (in Woodinville) and Woodinville-Duvall Road corridors and the roadway system south of SR 9, MP 0.00 were not identified as being impacted by construction traffic. No construction haul routes were identified or addressed. This information must be provided before an analysis of the impacts can be performed.

C5-146 **Page 16 to 45, *Section 16.1.3–Section 16.2.3.2***

Comment: The report did not identify impacts nor discuss mitigation options for impacts caused by the construction activity. The report mentions roadway closures but does not address time of

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Response to Comment C5-140

A comparison of AM and PM peak-hour volumes has been included in Chapter 16 of the Final EIS for the Unocal site and the Route 9 site. This volume comparison demonstrates that PM peak-hour volumes are higher than the AM peak hour. As a result, this time period was used in this evaluation to represent worst-case traffic conditions. However, AM peak-hour conditions were considered for SR-9 as part of evaluating concurrency requirements for Snohomish County. Please refer to Appendix 16-A, Transportation Concurrency: Route 9 Plant Site, of the Final EIS for this discussion.

Response to Comment C5-141

A concurrency analysis, according to the Snohomish County Unified Development Code, Section 30.66B, was conducted for the operating conditions of the Brightwater project. The analysis was conducted to determine impacts to the local transportation system, including within the City of Woodinville. The operation of the treatment plant on the Route 9 site is not expected to impact the City of Woodinville transportation system. Development of the Brightwater Treatment Plant at the Route 9 site would displace existing land uses that currently generate more trips than the proposed project.

The list of programmed and funded projects was provided by Snohomish County and included the Northshore School District Bus Barn. Please refer to the analysis presented in Appendix 16-A, Transportation Concurrency: Route 9 Plant Site, of the Final EIS for more detail.

Response to Comment C5-142

Specific construction access routes for each proposed site and portal have been identified and are illustrated in figures in Chapter 16 of the Final EIS.

Response to Comment C5-143

The Snohomish County project for widening Woodinville-Snohomish Road south of MP 0.00 was not included in the traffic analysis because it was not a funded, programmed construction project at the time of the analysis. Refer to Chapter 16 of the Final EIS for a more detailed description of projects included in the analysis.

Response to Comment C5-144

Please refer to the response to Comment C5-130 in this letter.

Response to Comment C5-145

Please refer to the response to Comment C5-130 in this letter. The traffic analysis does not anticipate significant use of those roads.

Response to Comment C5-146

Please refer to the response to Comments C5-130 and C5-134 in this letter. The traffic management plan (TMP) would include construction scheduling, hours of work, necessary improvements to the roadway network to maintain adequate traffic operating conditions, traffic control, and circulation plans to ensure safety to all travel modes along the affected roadways. These measures would be finalized by King County in conjunction with the affected jurisdictions during the construction permitting process. The TMP would also include a plan for monitoring and restoration of streets to pre-existing conditions, access for emergency services, and safe access for pedestrians and bicyclists, and would control the movement of workers, equipment, and delivery materials to minimize the traffic impacts along project access corridors. Construction-related activities, such as loading and unloading, would occur onsite and not on the transportation system.

C5-146 day, types of closure – full or partial, detours, length of time, advance notices or the societal costs to the adjoining agencies.

Page 16-50, Section 16.2.6.1

C5-147 Comment: The report did not identify nor provide sufficient information of upcoming private developments in the vicinity of Brightwater, i.e. Costco or Northshore School District Bus Barn. These developments are important as they generate both construction traffic and regular traffic when completed and they are significant traffic generators. Brightwater's traffic impact analysis should be performed in the context of these projects.

Page 16-51, Section 16.3.1.1, SR 9 Site

C5-148 Comment: The report identified the trips generated by the construction activity to be significant but yet there was no analysis of what the exact impacts will be, i.e. trip distribution, parking, nor the proposed mitigation methods, i.e. carpooling, TDM, on-site mobile amenities. This information needs to be provided before the impacts can be fully analyzed.

Page 16-51, Section 16.3.1.1, SR 9 Site

C5-149 Comment: The report identified the use of rail for construction materials delivery; however, the report did not provide any analysis of projects that are adjacent or along the rail line that could affect the rail activity. The City of Woodinville has a project to replace the railroad trestle on SR 202 with a completion date in 2006. The project has just recently received TIB funding. This construction project may also impact truck traffic to Portal 41, if access is needed through the SR 522/SR 202 Interchange. Also, the rail option for removing or restoring fill as referenced in Chapter 4, Section 4.2.1.1 does not address the potential for disrupting traffic at surface rail crossings in the City of Woodinville.

C5-150 ***Page 16-56, Section 16.4.1.2***

Comment: The operational ADT information is vague and needs more supporting information.

Page 16-56, Section 16.4.2.1

C5-151 Comment: The construction impacts identified were vague and lack sufficient information to determine the actual impacts to the adjoining agencies and business communities. The report cited temporary lane closures without discussing fully the effects of queue spillback to the downstream traffic and roadway system. The combination of local traffic, emergency traffic and construction traffic was not analyzed and addressed. The report did not provide construction haul route maps, with haul times, and trip distribution combined with all other demands of the roadway.

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Response to Comment C5-147

The Northshore School District Bus Barn would be displaced by the Brightwater project. The City of Woodinville and Snohomish County would be contacted to confirm private developments (including those by Costco, Waste Management of Washington, and other potentially affected developments) in the vicinity of the Route 9 site. The resulting construction traffic from these projects would be coordinated with Route 9 site construction. Traffic impact analyses in the vicinity of the Route 9 site were conducted both with and without the Costco project during construction (2007) and operations (2010) conditions. Please refer to Chapter 16, Impacts and Mitigation section, of the Final EIS for results of these analyses and the cumulative impacts. Please refer to the response to Comment C5-141 in this letter, for more details.

Response to Comment C5-148

Chapter 16 of the Final EIS has been updated to provide more details regarding the construction traffic impacts. Specific mitigation measures have been proposed for the Route 9 site to reduce construction-related traffic impacts and are also described in Chapter 16 of the Final EIS. Construction workers would transport themselves to and from the Route 9 site, but would be encouraged to carpool to reduce traffic. Parking for construction workers would be provided onsite. Please refer to the response to Comment C5-146 in this letter.

Response to Comment C5-149

Specific mitigation measures have been proposed for the Route 9 site to reduce construction-related traffic impacts and are described in Chapter 16 of the Final EIS. The level of mitigation measures was designed to address the specific impacts attributable to Route 9 site construction and do not warrant rail access or offsite worker parking. The rail option for the Route 9 site has been removed from consideration. All concrete and materials would be transported by single-unit

trucks and all earthwork by double unit truck-and-trailers. Construction workers would transport themselves to and from the Route 9 site, but would be encouraged to carpool to reduce traffic. Parking would be provided onsite. The SR-522/SR-202 interchange is not expected to be an access route for Brightwater project traffic.

Response to Comment C5-150

Average daily traffic information has been expanded in the Final EIS. Please refer to Chapter 16 of the Final EIS for more detailed information on daily Brightwater operational traffic volumes.

Response to Comment C5-151

Information on construction impacts has been expanded in the Final EIS. Please refer to the response to Comment C5-146 in this letter.

Chapter 17 Public Services and Utilities

C5-152 ***Page 17-5, Section 17.1.2.2 -*** *The DEIS states there are "no solid waste facilities located on or close to the Route 9 site."*

Comment: A new facility designed to handle construction-related waste is under construction in Woodinville, a short distance from the Route 9 site. The FEIS should analyze the potential of this facility to accept construction waste from the project construction and potential impacts to traffic and other relevant sections of the impact statement. This site will also handle all common recyclables. This site is a large regional facility and its presence should be recognized in the FEIS.

C5-153 ***Page 17-13, Section 17.1.3.2 -*** *The DEIS states response times from the City of Woodinville Police Department (if the City should be called to assist under mutual aid agreements).*

Comment: These response times are accurate provided there are no traffic issues. However, construction activities could cause an inability to circumvent traffic back-ups for emergency vehicles. The impact will affect City of Woodinville emergency response units in the event of a mutual aid response from Snohomish County agencies. An additional concern is the potential for traffic back-ups during due to increased truck traffic or possible chemical spills related to project operations.

Thank you for the opportunity to comment. If you should have any questions regarding these comments, you may direct them to me at 425 489-2700 extension 2205 or Community Development Director Ray Sturtz, at extension 2281.

Sincerely,

Pete Rose

Pete Rose
City Manager

Ray Sturtz
Community Development Director
SEPA Responsible Official

c: City Council Members
Department Directors

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Response to Comment C5-152

Chapter 17 has been revised in the Final EIS to include a discussion of the new solid waste facility currently under construction in Woodinville. As the final construction schedule and design are determined, King County would examine utilizing the new solid waste facility in Woodinville to dispose of or recycle materials from Brightwater construction sites. Chapter 16 analyzes local traffic impacts associated with the construction and operation of Brightwater.

Response to Comment C5-153

Please refer to the responses to the Snohomish County Fire District No. 7, Comment S1-2. The Final EIS recognizes emergency service response times are subject to change depending on variables that include the type of emergency, site access, impacts from natural environmental causes, and traffic delay. Prior to the construction phase of the project, King County will develop construction traffic plans in accordance with local permitting requirements. As part of this process, King County will coordinate with local jurisdictions and emergency service providers to identify emergency access routes and ensure mitigation measures are effective and acceptable means to minimize impacts.

A Comparative Analysis of Economic and Fiscal Impacts of Developing the Route 9 Commercial & Industrial Site within the Proposed Grace Annexation Area of the City of Woodinville

Prepared for:

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January 2, 2003

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A Comparative Analysis of Economic and Fiscal Impacts of Developing the Route 9 Commercial & Industrial Site within the Proposed Grace Annexation Area of the City of Woodinville

Executive Summary

King County is proposing to build a new wastewater system, called Brightwater, to meet the region's long-term wastewater treatment needs. The proposed Brightwater system would include a secondary wastewater treatment plant; the associated pipelines, pump stations, and other facilities that make up a conveyance system to transport wastewater to and from the plant; and an outfall to discharge effluent to Puget Sound. Construction of the Brightwater system is scheduled to begin as early as 2004 and be completed with the plant online in 2010.

The preferred alternative site for the Brightwater secondary wastewater treatment plant (WWTP) is along State Route 9 in unincorporated Snohomish County. Much of the site is within the City of Woodinville's urban growth area (UGA) and is currently zoned by Snohomish County for commercial and industrial uses. The City of Woodinville's urban growth area, called the Grace neighborhood, is described in the City of Woodinville's Comprehensive Plan as the "industrial area north of the City limits in Snohomish County." The City of Woodinville currently plans to annex the Grace neighborhood. For the purposes of this study, annexation is assumed to be completed by the end of 2004.

The purpose of this study is to present results of an economic and fiscal impact analysis for two development scenarios within the Grace neighborhood. These two development scenarios are: (1) the proposed Brightwater wastewater treatment facility; and (2) a business park consisting of a retail center and office complex. Each of these development scenarios has potentially significant economic and fiscal implications for City of Woodinville, assuming the area is annexed by the city. In particular, the principal question for this study is as follows: what is the stream of revenues and economic effects of constructing and operating the Brightwater wastewater treatment facility in the Grace annexation area as compared with the planned business park scenario? Related, are there any stigma effects on property values associated with the proposed Brightwater wastewater treatment facility?

This study is not a complete fiscal impact analysis. Rather, it is limited to considering only the revenue side; the other major component of a fiscal study—costs or expenditures—are not analyzed in this study. As such, major tax revenues generated from direct project-related activities, namely revenues generated from direct construction outlays, sales receipts (subject to the sales and use tax) from operations, real estate sales, additions to the assessed property base, and energy use are analyzed in this study. The revenue sources considered by the analysis consist of the property tax, sales and use tax, real estate excise tax, and utility tax (excise tax on electricity sales). In addition, the study presents findings on the economic effects—employment and earnings—of both of these development scenarios. Construction and subsequent operation of the Brightwater wastewater treatment facility and the business park will have employment and

earnings effects by hiring new workers; in turn, these construction and operation activities will have "ripple" effects throughout the regional economy, and within the City of Woodinville.

Brightwater Waste Water Treatment Plant

The plant is to be built over a six- to eight-year period, with operations scheduled to begin in 2010. The system capacity is initially designed for treatment of 34 million gallons per day (mgd); however, the system is capable of expanding to eventually accommodate 54 mgd. For purposes of this analysis, it is assumed that construction will commence in 2004 and be completed in 2009, with operations to begin in 2010.

The total construction cost for the plant is estimated at $474 million in 2002 dollars, based on King County Department of Natural Resources and Parks estimates. These cost outlays have in turn been distributed over the 2004-2010 timeframe of construction. Construction labor at the Brightwater WWTP site is estimated at a level of 350 workers during the peak construction period. Truck drivers would add an additional 60 – 70 workers. Combined, the total peak construction workforce is estimated at 410 – 420 workers.

Operation of the Brightwater WWTP is assumed to formally commence in 2010, although operational personnel are expected to be employed at the plant a year prior during the testing and startup period following construction. Operation costs (i.e., operations and maintenance) have been estimated at $274 million over a 20-year period, based on a present value calculation using a discount rate of 3 percent. It is anticipated that the operations workforce will require 60 full-time-equivalent (FTE) workers.

Both construction and operation of the Brightwater wastewater treatment facility will create economic ripple effects within the region. During the construction phase, total (direct and indirect) employment and earnings will peak during 2008, amounting to 970 workers with earnings of $11.8 million. Operations phase employment and earnings are projected at 60 workers and $5.3 million earnings in 2010, the steady-state year.[1] With associated activity from this Brightwater WWTP operations phase, a total workforce (direct and indirect) is estimated at 113 workers for the first year of full operation.

With annexation of the proposed site for the Brightwater WWTP, the City of Woodinville would be expected to realize substantial revenue flows directly from the construction phase but only modest revenues once Brightwater WWTP becomes fully operational. Actual collections benefiting the City would occur upon annexing the Grace neighborhood area, which is anticipated by the end of 2004. Sales and use tax collections represent the major component of direct revenue contributions to the City following annexation of the area under consideration. The property tax is not applicable, as the project would be publicly-owned. The real estate excise tax, which is levied at 0.5 percent on property sales within the City is also not applicable, as sales transactions are assumed to be completed prior to 2005. Finally, the utility tax on electricity, levied at 2.0 percent of charges, is estimated to generate modest revenues during

[1] Steady-state refers to the period of full-operation with no expected expansion or change; economic and revenue effects are assumed to remain constant over this time period.

operations, some $33 thousand per annum. Over the projection period—2005 through 2012—total revenues attributable directly to the project are estimated at $3.83 million in 2002 dollars.

Grace Annexation Planned Business Park

The area designated for development of the Brightwater WWTP is also zoned for a business park. For this study, development is predicated on availability of an 80-acre site (buildable area) with assumptions regarding the type of business uses and mix of structures. It is assumed that two-thirds of the site would be developed as retail with the remaining one-third devoted to office buildings. The retail center would consist of a power shopping center, two "big box" mass merchandising stores, and four fast food restaurants. The retail area would involve development of 25 percent of the designated land area for structures with the remaining area used for parking and buffers. A total of 580,000 square feet of retail space would be developed under this scenario. The office complex would consist of a total area of 1,150,000 square feet. It is important to note that the business park development scenario is hypothetical; no market analysis has been performed as part of this study to validate the assumptions regarding projected development and absorption of retail and office space at the site.

The total construction cost for the planned Business Park is estimated at $274 million in 2002 dollars. Construction would be carried out over a 7-year period. The figures for construction do not include land costs, which are estimated at $69.4 million, similar to the assumption used for the Brightwater WWTP analysis. Land purchases at the site are assumed to occur over a 3-year period, beginning in 2003. The peak year construction workforce is estimated at 255 workers, or about half of the workforce estimated for the Brightwater WWTP.

Business park operations are assumed to commence as construction projects are completed, beginning in 2005. The operations workforce for the retail sales center is expected to employ 2,060 workers at full-development; employment at the office complex is estimated at 3,485 workers, based on the floor area-to-employee ratios. These direct employment estimates [totaling 5,545 workers (that is, 2,060 + 3,485 = 5,545)] are on a full-time-equivalent basis. Sales subject to the sales and use tax are estimated at $159.3 million in the steady-state year. At full build-out, the business park is expected to have an assessed valuation of $307.7 million.

The analysis of economic impacts related to development of a planned business park is on the employment and earnings generated during construction and operations of the facility. Total construction phase employment and earnings during the peak construction year, 2005, amount to 514 workers (composed of 255 direct workers and 259 indirect workers) and $22.0 million, respectively. Operations phase total employment and earnings are projected at 8,621 workers (composed of 5,545 direct workers and 3,076 indirect workers) and $352.3 million earnings in 2010, the steady-state year.

With annexation by the City of the proposed site, the City of Woodinville would be expected to realize substantial revenue flows directly from both construction and operation of the planned business park. The actual tax collections benefiting the City would occur upon annexing the subject area, which is anticipated by the end of 2004. A total of $9.5 million in collections from sales and use tax are projected between 2005 and 2010. The property tax is also a major revenue source from the business park project, with projected revenues over the 2005 to 2010 period

amounting to $2.5 million. Over the projection period, 2005 through 2012, total revenues attributable directly to the project are estimated at $14.64 million.

The economic and fiscal differences associated with both development scenarios are noteworthy. Total peak construction employment for the Brightwater WWTP development is estimated at 970 workers in year 2008; for the business park the comparable figure is 514 workers in year 2005, for a difference of 415 workers, in favor of the Brightwater WWTP. During operations, however, the total employment results are reversed in favor of the business park development. Total steady-state operations employment, which occurs in year 2010, is estimated at 113 workers under the Brightwater WWTP scenario compared to 8,621 worker under the business park scenario, for a difference of 8,508 workers. Revenue impacts on the City of Woodinville also differ substantially between the two development scenarios. Under the Brightwater WWTP scenario, the City is projected to receive $3.7 million over the projection period 2005 through 2010; however, the on-going revenue collections during the steady-state period (2011-2030) are only $33,000 per year. The comparable figures for the planned business park are $12.4 million over the 6-year projection horizon (2005-2010) and $2.1 million annually for the steady-state period (2011-2030), a difference of $8.8 million during the projection period and $1.98 million per annum during steady-state, in favor of the business park scenario.

Clearly, the City of Woodinville stands to benefit from increased revenue flows under both scenarios, but at a dramatically greater magnitude assuming the business park is developed. The on-going revenue flow under the business park scenario is over 50 times as great as the Brightwater WWTP scenario.

If the Brightwater WWTP were sited in the proposed annexation area of Woodinville, what would be the potential impacts on nearby residential property values? Although more research is required to provide a more definitive answer, it is not expected that the siting of the wastewater treatment facility would have a negative impact on nearby residential property values, assuming that odor control is successful and odor is not detectable off-site, as claimed in the DEIS.

A Comparative Analysis of Economic and Fiscal Impacts of Developing the Route 9 Commercial & Industrial Site within the Proposed Grace Annexation Area of the City of Woodinville

1. Introduction

Background

King County is proposing to build a new wastewater system, called Brightwater, to meet the region's long-term wastewater treatment needs. The Brightwater system would include a secondary wastewater treatment plant; the associated pipelines, pump stations, and other facilities that make up a conveyance system to transport wastewater to and from the plant; and an outfall to discharge effluent to Puget Sound. The treatment facility would provide additional capacity in 2010 to treat 36 million gallons per day (mgd) of wastewater. It would also produce biosolids for application on forestry and agricultural lands as well as highly treated water for non-drinking uses, such as landscape irrigation. Construction of the Brightwater system is scheduled to begin as early as 2004 and be completed with the plant online in 2010.

The preferred alternative site for the Brightwater secondary wastewater treatment plant (WWTP) is along State Route 9 in unincorporated Snohomish County. More specifically, the site is located just north of the intersection of State Route 9 and State Route 522 and the city limits of Woodinville. The 106-acre roughly rectangular site consists of parcels owned by various individuals, businesses, and organizations. Much of the site (69 acres) is within the City of Woodinville's urban growth area (UGA) and is currently zoned by Snohomish County for commercial and industrial uses. The northern 37 acre portion of the site is located outside the UGA and is largely undeveloped and partially forested, with the presence of wetlands. Brightwater's stormwater management system may be located in this northern area; but all buildings and plant process facilities would be located within the UGA area (*Brightwater Draft EIS*, p.1-5).

Currently located in Snohomish County's designated urban growth area, Grace neighborhood is contiguous with the City limits of Woodinville. Grace neighborhood is described in the City of Woodinville's Comprehensive Plan as the "industrial area north of the City limits in Snohomish County." Although the industrial/business park class is the dominant land use in Grace neighborhood, other land uses are present within the 480-acre area. The City of Woodinville is currently proposing to annex the Grace neighborhood.

The City of Woodinville Comprehensive Plan designates the Grace neighborhood as Industrial Corresponding zoning districts and zoning overlays (which would be applied to the area after annexation) allowing a variety of industrial and commercial uses.

Study Purpose and Scope

The purpose of this study is to present results of an economic and fiscal impact analysis for two development scenarios within the Grace neighborhood. These two development scenarios are:

(1) the proposed Brightwater wastewater treatment facility (WWTP); and (2) a business park consisting of a retail center and office complex. Each of these development scenarios has potentially significant economic and fiscal implications for City of Woodinville, assuming the area is annexed by the city. In particular, the study poses this principal question: what is the stream of revenues and economic effects of constructing and operating the Brightwater WWTP in the Grace neighborhood compared with the planned business park scenario? Related, are there any associated stigma effects on property values with these two alternatives?

This study is not a complete fiscal impact analysis. Rather, it is limited to considering major tax revenues generated from direct project-related activities, namely revenues generated from direct construction outlays, sales receipts (subject to the sales and use tax) from operations, real estate sales, additions to the assessed property base, and energy use.[1] The revenue sources considered by the analysis consist of the property tax, sales and use tax, real estate excise tax, and utility tax (excise tax on electricity sales). Since the study is limited to an evaluation of revenues directly associated with each of the development scenarios, the other major component of a fiscal study—costs or expenditures—is not presented here. In addition, the study presents findings on the economic effects—employment and earnings—of both of these development scenarios. Construction and operation of the Brightwater wastewater treatment facility and the business park will also have "ripple" effects throughout the regional economy and within the City of Woodinville.

In the following narrative and tables, we present and compare the revenue and economic implications for each of the development scenarios in the Grace neighborhood. First, economic and revenue impact results for each development scenario are presented. Then, a discussion of the potential stigma effects of siting a wastewater treatment facility is presented. To the extent that this facility is labeled "noxious" or "nuisance," what are the potential negative impacts on the property values of surrounding properties? Finally, we summarize and compare the economic and fiscal implications of these two development scenarios for the City of Woodinville.

Organization

This study begins (Section 2) with a brief analysis of revenues by source generated by the City of Woodinville during recent years: 2000, 2001, and 2002 (budgeted). The analysis indicates changes in revenues by source over the period as well as the share of total revenues contributed by the property tax, sales and use tax, real estate excise tax, and utility tax. This serves as background for considering the impact of revenues generated from the development alternatives on the City budget. Section 3 presents a description of the Brightwater WWTP and Business Park alternatives and, in addition, discusses the City's UGA that extends into Snohomish County and plans for annexation of that area. For the purposes of this comparative analysis, it is assumed that the City of Woodinville will annex the UGA by the end of 2004. Direct construction and operations activities are given in terms of costs and schedules for each of these two alternatives. Section 4 provides an evaluation of the economic and fiscal (revenue) impacts of developing the Brightwater WWTP. Both direct and indirect economic impacts are presented in terms of employment and earnings. Additions to the City's tax base and resulting tax revenue

[1] Revenues generated indirectly through worker household consumption and induced industrial activity are not considered. Similarly, expenditures made by the City are not considered in the fiscal analysis.

flows from direct construction and operations are given. Section 5 provides a similar evaluation of economic and fiscal impacts resulting from development of a Business Park. Section 6 presents an analysis of potential stigma effects of developing the project alternatives on neighboring property values. The final section (Section 7) presents a summary of the results and study conclusions.

2. City of Woodinville Revenues – Recent History

Like most municipalities in the state, the City of Woodinville derives a large share of its revenues from the property tax and sales and use tax. Table 1 indicates revenues by source generated by the City for the years 2000, 2001, and 2002. Combined revenues are presented for the City's General Fund, Special Revenue Fund, Debt Service Fund, and Capital Funds. As shown in the table, local revenues dominate total revenues by source (excluding beginning fund balances and interest earnings), with $10.3 million generated from all local sources out of total revenues of $10.7 million in 2002. The pattern has not changed significantly since 2000, even though intergovernmental revenues declined by 16.5 percent during the period.

Table 1. City of Woodinville Historical Revenues, 2000-2002 (Current Dollars)

Revenue by Source: 2000 – 2002	FY 2000 Actual	FY 2001 Budget	FY 2002 Budget	Percent Change 2000-2002	Percent Change 2001-2002	Ave.Annual Percent Change 2000-2002
Local Source:						
Property Tax	$2,054,047	$2,290,000	$2,345,000	14.5%	2.4%	7.3%
Sales & Use Tax	4,526,796	5,007,000	4,800,000	6.0%	-4.1%	3.0%
Sales-Criminal Justice	215,942	216,418	219,240	1.5%	1.3%	0.7%
CableTV Franchise Fee	58,197	56,000	72,100	23.9%	28.8%	11.9%
Gambling Tax	94,507	98,000	94,000	-0.5%	-4.1%	-0.2%
Admissions Tax	205,299	212,000	206,000	0.3%	-2.8%	0.2%
Utility Tax	758,692	820,000	921,000	21.4%	12.3%	10.7%
Building Permits	183,095	183,340	147,000	-19.7%	-19.8%	-9.8%
Other Development	126,652	53,737	68,040	-46.3%	26.6%	-23.2%
Other Licenses & Permits	9,222	9,500	1,712	-81.4%	-82.0%	-40.7%
Fines & Forfeits	46,106	12,000	34,800	-24.5%	190.0%	-12.2%
Real Estate Excise Tax	612,440	552,000	580,000	-5.3%	5.1%	-2.6%
Zoning & Subdivision	45,779	27,810	41,200	-10.0%	48.1%	-5.0%
Design Review	0	12,325	68,200	NA	453.3%	100.7%
Land Use Application	0	50,000	96,000	NA	92.0%	100.0%
Plan Check Fee	260,119	221,450	206,000	-20.8%	-7.0%	-10.4%
ESA Bio Review	0	50,000	0	NA	-100.0%	-100.0%
Park Impact Fees	0	45,000	90,000	NA	100.0%	100.0%
Other Charges and Fees	199,805	223,549	239,058	19.6%	6.9%	9.8%
Private Contributions	64,601	40,000	45,000	-30.3%	12.5%	-15.1%
Miscellaneous	21,264	21,525	23,600	11.0%	9.6%	5.5%
Subtotal, Local Sources	**$9,482,563**	**$10,201,654**	**$10,297,950**	**8.6%**	**0.9%**	**4.3%**
Per Capita	**$1,031.39**	**$1,109.60**	**$1,117.52**	**8.4%**	**0.7%**	**4.2%**

Table 1 (Continued)

Revenue by Source: 2000 – 2002	FY 2000 Actual	FY 2001 Budget	FY 2002 Budget	Percent Change 2000-2002	Percent Change 2001-2002	Ave.Annual Percent Change 2000-2002
Intergovernmental Source:						
State Grants	$30,119	$5,150	$5,150	-82.9%	0.0%	-41.5%
MV Fuel Tax	227,590	229,000	197,372	-13.3%	-13.8%	-6.6%
Vehicle License	94,121	92,000	101,970	8.3%	10.8%	4.2%
Local Govt. Assistance	83,471	54,531	56,000	-32.9%	2.7%	-16.4%
Interlocal Grants	3,059	12,360	8,240	169.4%	-33.3%	-84.7%
Other Intergovt. Revenue	2,644	2,060	515	-80.5%	-75.0%	-40.3%
Subtotal, Intergovt. Source	**$441,004**	**$395,101**	**$369,247**	**-16.3%**	**-6.5%**	**-8.1%**
Per Capita	**$47.97**	**$42.97**	**$40.07**	**-16.5%**	**-6.8%**	**-8.3%**
Total Operating Revenue	**$9,923,567**	**$10,596,755**	**$10,667,197**	**7.5%**	**0.7%**	**3.7%**
Per Capita	**$1,079.35**	**$1,152.57**	**$1,157.59**	**7.2%**	**0.4%**	**3.6%**
Beginning Fund Balance	$15,788,714	416,478,465	$13,442,670	-14.9%	-18.4%	-7.4%
Interest	$915,070	$1,156,899	$472,900	-48.3%	-59.1%	-24.2%
Total Available Revenue	**$26,627,351**	**$28,232,119**	**$24,582,767**	**-7.7%**	**-12.9%**	**-3.8%**
Per Capita	**$2,896.17**	**$3,070.71**	**$2,667.69**	**-7.9%**	**-13.1%**	**-4.0%**
POPULATION	**9,194**	**9,194**	**9,215**			

Note: This table includes the General Fund and Special Revenue Funds (i.e., Street, Arterial Street, Contingency, Mitigation, Admission Tax, Park Impact Fee, and City Hall System Replacement Funds), Debt Service Fund, and Capital Funds.
Source: City of Woodinville, *Final Budget, 2002*.

Out of total revenues generated in 2002, 22 percent were provided from property tax collections (Figure 1). The property tax base (taxable assessed valuation) for the City of Woodinville in 2002 tax collections stood at $2.3 million, substantially up from $2.1 million in 2000. (The City's property tax levy rate for 2002 was 1.51427 per $1,000 assessed valuation, slightly lower than the 2001 figure of $1.59037 per $1000 assessed valuation.) Property tax collections increased by 7.3 percent per annum between 2000 and 2002, as shown in the table.

The sales and use tax[2] contributed $4.8 million or 44.9 percent of total revenues by source in 2002. As shown in Table 1, taxes from this source increased over the recent period at 3.0 percent per annum. The City's sales tax rate is 0.85 percent of taxable sales (1.0 percent less 0.15 percent distributed to King County). Sales tax distributions for criminal justice are made on a population-weighted basis from countywide collections.

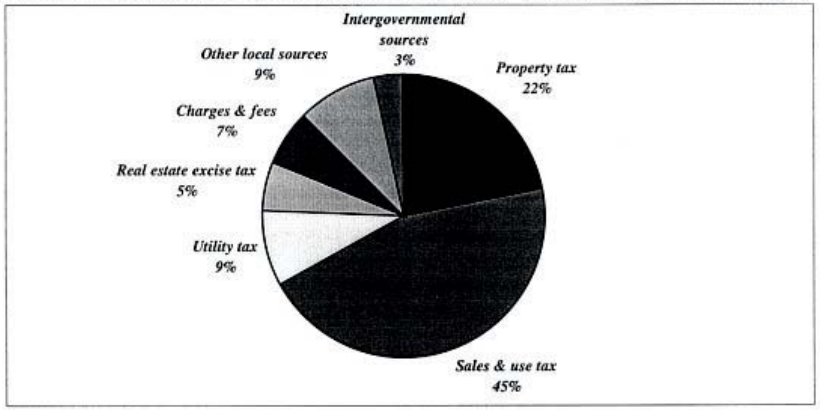
[2] Retail sales tax is paid by the purchaser based on the selling price of tangible goods and certain services; the use tax is paid by the user on which no sales tax was paid, for example on goods purchased from sellers located in other states.

Utility taxes, the next largest tax source are shown at $921,000 in 2002, raising from $759,000 in 2000, for an annual average rate of growth of 10.0 percent. Tax collections from this source represented 8.6 percent of total revenues by source. The City's tax rate on electricity sales is 2.0 percent of gross sales; the tax on telephone and solid waste handling charges is set at 4.0 percent.

Real estate excise tax collections are also a major source of revenues for the City. In 2002 they were budgeted at $580,000, down modestly from $612,000 in 2000, declining by an average annual rate of 2.6 percent. The 2002 share of total revenues by source contributed by utility taxes was 5.4 percent.

Total available revenue to the City of Woodinville, including funds from beginning fund balance and interest, amounted to $24.6 million in 2002. This amount represents a decline of 7.7 percent below the City's 2000 level of $26.6 million, or an average annual decrease of 3.8 percent over the two-year period.

Figure 1. Revenues by Major Source for the City of Woodinville, FY2002 Budget



Source: City of Woodinville. Final Budget, 2002

3. The Proposed Brightwater WWTP and Business Park Alternatives

The Brightwater WWTP – Project Description

The discussion presented in this section is intended to indicate only those key elements of the Brightwater wastewater treatment facility (WWTP) that relate to the economic and fiscal issues dealt with in this study (a full description of the proposed project is available in the *Brightwater Draft EIS*).

Construction Phase of Brightwater WWTP

The proposed Brightwater WWTP is part of a wastewater treatment system that comprises raw sewerage effluent conveyance to the treatment plant site, which is located at the junction of State Route 9 and NE 195th Street, and treated sewerage conveyance from the plant to an outfall located to the west on Puget Sound.

The plant is to be built over a six- to eight-year period, with operations scheduled to begin in 2010. The system capacity is initially designed for treatment of 34 million gallons per day (mgd); however, the system is capable of expanding to eventually accommodate 54 mgd. The schedule for construction of the treatment plant calls for site preparation – 1 to 2 years; concrete emplacement – 3 to 4 years; equipment installation – 2 to 3 years, and testing/startup – 1 to 2 years. Some of these activities will be carried out concurrently. For purposes of this analysis, it is assumed that construction will commence in 2004 and be completed in 2009, with operations to begin in year 2010.

The proposed site of the WWTP will be primarily located in the proposed Grace Annexation Area of the City of Woodinville with buildable acreage estimated at 80 acres. It is anticipated that King County (Department of Natural Resources and Parks) would acquire the land over a two-year period of 2003-2004 by negotiated sales. For purposes of this analysis, land value is estimated at $69.4 million (that is, 80 buildable acres priced at about $870,000 per acre or $20 per square foot of land area).

The total construction cost for the plant (assuming the Force Main/Gravity Tunnel, the preferred system) is estimated at $474 million in 2002 dollars, based on King County Department of Natural Resources and Parks estimates (*Brightwater Treatment System, Cost Estimates for the Brightwater Systems, Information Handout, November 16, 2002*). These cost outlays have in turn been distributed over the 2004-2010 timeframe of construction (see Table 2).

Construction labor at the Brightwater WWTP site is estimated at a level of 350 workers during the peak construction period. Truck drivers would add an additional 60 – 70 workers (based on 249 daily heavy haul truck trips). Combined, the total peak construction workforce is estimated at 410 – 420 workers (*Brightwater Draft EIS*, p. 16-37). (For purposes of this study, the construction workforce is estimated for several worker categories, namely, construction, architecture/engineering and administration, and machinery and equipment installation. Adding these other worker categories increases the peak construction workforce to 505 workers, as shown in Table 2 below.)

Table 2: Construction Cost Outlays for the Brightwater WWTP, 2004-2010

Year	Cost ($ millions)
2004	$9.5
2005	$117.3
2006	$88.9
2007	$112.6
2008	$117.3
2009	$28.4
2010	$0.0
Cumulative total	**$474.0**

Operation Phase of the Brightwater WWTP

Operation of the Brightwater WWTP is assumed to formally commence in 2010, although operational personnel are expected to be employed at the plant a year prior during the testing and startup period following construction. Operation costs (i.e., operations and maintenance or O & M) have been estimated by King County Department of Natural Resources and Parks at $274 million over a 20-year period, based on a present value calculation using a discount rate of 3 percent (*Brightwater Treatment System, Cost Estimates for the Brightwater Systems, Information Handout, November 16, 2002*).

It is anticipated that the operations workforce will require 60 full-time-equivalent (FTE) workers. This number is derived from estimated employee trips/passenger cars of 120 daily (*Brightwater Draft DEIS*, p. 16 – 35). (For purposes of this study, it is assumed that half of these workers would be brought on line during the last year of construction-2009).

With the plant capacity at 34 mgd, this will require annual energy consumption of approximately 25,750 MWh, based on information provided in the *Brightwater Draft EIS*.[3] It is stated, also in the *Brightwater Draft EIS*, that 5,000 MWh of energy required from outside sources could be satisfied through energy recovery from bio-gas production on site.

Business Park Scenario– Project Description

The area designated for development of the Brightwater WWTP preferred alternative is designated "industrial" on the City of Woodinville's Comprehensive Plan Future Land Use Map and upon annexation by the City will be zoned to allow a business park.[4] The development concept for a business park follows general land use principals that involve zoning and building

[3] The *Brightwater Draft DEIS*, p. 8-10 and 8-11, indicates a gross annual energy consumption for the Route 9 plant site, assuming 36 mgd, as follows:

Plant with secondary treatment – 18,000 to 26,000 MWh
Reuse with chemical disinfection – 2,000 to 4,000 MWh
Stormwater pumping – 600 to 900 MWh

[4] Again, it is assumed that this area—Grace Neighborhood—will be annexed by the City of Woodinville in 2004.

code regulations, available land area, as well as market performance criteria. For this study, development is predicated on availability of an 80-acre site (buildable area) within the Grace neighborhood[5] with assumptions regarding the type of business uses and mix of structures. It is important to note that the business park development scenario is hypothetical; no market analysis has been performed as part of this study to validate assumptions regarding projected development and absorption of retail and office space at the site.

It is assumed that two-thirds of the site would be developed as retail with the remaining one-third devoted to office buildings. The retail center would consist of a power shopping center[6], two "big box" mass merchandising stores, and four fast food restaurants. The retail area would involve development of 25 percent of the designated land area for structures with the remaining area used for parking and buffers. A total of 580,000 square feet of retail space would be developed under this scenario. The office complex would be subject to FAR coverage of 1.0 and, as such, require construction of mid-rise office buildings with total area of 1,150,000 square feet. Table 3 presents the business and office development concept by type of use and square feet.

Table 3. Business Park Development Scenario

Type of Use	*Square feet*
Power Shopping Center, total	**325,000**
Anchor Tenant	130,000
Supermarket	60,000
Miscellaneous Retail	135,000
Big Box- #1	**130,000**
Big Box-#2	**115,000**
Restaurants - (four units @ 2,500 sq ft.)	**10,000**
Total, retail	***580,000***
Office, Class A	**1,150,000**
Total, retail and office	***1,730,000***

Construction Phase of the Business Park

The total construction cost for the planned Business Park is estimated at $274 million in 2002 dollars, based on square footage construction costs derived from published sources (*RS Means, Building Construction Cost Data, 2003, 61st Edition)* and developer information. Total costs include 10 percent for site preparation and on- and off-site utilities, facilities construction, tenant improvements, and fixtures, furniture and equipment. The share of total construction costs for architecture/engineering and management is estimated at 7 percent (representing on-going costs

[5] In other words, the entire 80-acre (buildable area) site is within the annexation area.

[6] According to the International Council of Shopping Centers, there are several shopping center types. A power shopping center is one dominated by several large anchors, including discount department stores (Wal-Mart, Target, K-Mart), warehouse clubs (e.g., Costco), and "category killers," i.e., stores that offer tremendous selection in a particular merchandise category at low prices (e.g., Home Depot, Lowes, Office Depot, Staples, Borders, Barnes & Noble). The center typically consists of several freestanding (unconnected) anchors and only a minimum of small specialty tenants.

for supervision and related services following design. The outlays (in millions of 2002 dollars) have been distributed over the timeframe of construction of the business park scenario (Table 4).

Table 4 Construction Cost Outlays for Business Park Development, 2003-2010

Year	*Cost ($millions)*
2003	4.6
2004	$28.2
2005	$61.8
2006	$57.2
2007	$38.2
2008	$38.2
2009	$19.1
2010	$0.0
Cumulative total	**$247.3**

Construction would be carried out over a 7-year period, as indicated, with the first year, 2003, focused on site clearing and both on- and off-site utilities construction. The figures for construction do not include land costs, which are estimated at $69.4 million, similar to the assumption used for the Brightwater WWTP analysis. Land purchases at the site are assumed to occur over a 3-year period, beginning in 2003.

The peak year construction workforce is estimated at 255 workers, or about half of the workforce estimated for the Brightwater WWTP.

Operation Phase of the Business Park

Business park operations are assumed to commence as construction projects are completed, beginning in 2005. Employment is estimated based on standard square footage/employment factors. For example, a mass merchandising anchor tenant at the proposed power shopping center would be expected to hire employees on the basis of 300 square feet per employee. Supermarket ratios are higher at 400 square feet per employee; whereas, miscellaneous retail, including department stores, would be expected to hire employees on the basis of 225 square feet per employee. Fast food restaurants have even lower square footage to employee ratios, estimated at 167 square feet per employee. Office employment would be expected to reflect a gross area to employee ratio of 330 square feet.

The operations workforce for the retail sales center is expected to employ 2,060 workers at full-development; employment at the office complex is estimated at 3,485 workers, based on the floor area-to-employee ratios. These direct employment estimates (totaling 5,545 workers) are on a full-time-equivalent basis. The steady-state maximum employment figure is achieved by 2010, the year when the business park development is completely built-out and fully-operational.

Sales generated from the retail center are estimated on the basis of square footage/sales ratios. For the anchor tenant of the power shopping center, sales per square foot are estimated at $345, which is based on actual sales by major mass merchandising operations. Sales per square feet ratios for supermarket and miscellaneous retail are estimated at $430 and $200, respectively, with taxable sales of the former figured at 25 percent of total sales. Sales for fast food restaurants are much higher on a square footage basis, with estimated sales of $750 per square foot. Total sales activity from the retail sales center is expected to rise from $20.8 million in 2005 to $178.8 million at steady-state (2010 and thereafter). Sales subject to the sales and use tax are estimated at $159.3 million in the steady-state year.

Assessed property valuation, including land and structures, is estimated using cost as the basis for assessment. At full build-out, the business park is expected to have an assessed valuation of $307.7 million.

The planned business park will require annual energy consumption of approximately 21,925 MWh, based on utilization rates of 15.0 KWh per square foot for the retail center and 11.5 KWh per square foot for the office complex.

4. Economic and Fiscal (Revenue) Impacts Associated with Brightwater WWTP

Economic Effects of the Brightwater WWTP

The primary focus of the analysis of economic impacts related to development of Brightwater WWTP is on the employment and earnings[7] generated during construction and operations of the facility. Employment measured in terms of full-time-equivalents is given for both construction and operations, as shown in Table 5. Several worker categories including construction workers, machinery and equipment installation workers, and architectural, engineering, and administrative (A/E&A) workers are included in the direct worker totals. Peak year employment was estimated at 505 workers of whom about 66 percent are in construction occupations. Both construction and A/E&A workers were estimated based on their respective cost shares of total construction program outlays. For construction workers the labor share represented 26.1 percent of total contract construction outlays based on the *1997 Census of Heavy Construction Contractors*. The labor share represented by machine and equipment installers was estimated at 33.3 percent of expenditures for these materials. The labor share represented by A/E&A workers was estimated at 38.8 percent of expenditures represented by these activities, which for new hires were set at 7 percent of total construction program outlays. The labor share for this worker group was based on the earnings to output ratio for the engineering and architectural services sector in Washington State in 1996 (as reported in tabulations generated by the IMPLAN, 1996 Version economic impact model used in this study).

Direct operations workers were estimated based on information provided by the project proponent (*Brightwater Draft EIS*, p.16-35), as derived from estimated employee trips/passenger cars of 120 daily. Operations employment of 30 workers is projected for 2009, increasing to 60 workers in 2010. Direct employee compensation (wages and salaries) of construction workers and machinery and equipment installation workers were based on 2000 average annual covered wages for construction, adjusted for seasonality and inflated to 2002 dollars, based on Washington State Employment Security Department data. The average annual wage applied for construction workers (water, sewer, and utility lines workers) is $46,980 unadjusted and $51,676 adjusted (i.e., with benefits). Similarly, architecture, engineering and administration (A&E/A) worker annual earnings were based on average earnings for engineering management, at $54,261, again based on information from the Washington State Employment Security Department.

Indirect earnings were estimated at $33,773, based on the state average for all workers in the local government, state government, finance, insurance, and real estate (FIRE), retail trade, and services sectors, exclusive of prepackage software and computer programming, and a portion of the construction, wholesale trade, and transportation and public utilities sectors. Washington State Employment Security Department data for 2000 was used to estimate the indirect earnings average, which was then inflated to 2002 dollars.

[7] Earnings refer to wages and salaries of workers and proprietors' income.

Table 5 Brightwater WWTP Employment & Earnings (2002 $Millions)

Category	2004	2005	2006	2007	2008	2009	2010	2011	2012
Construction Phase:									
Direct Workers:	39	483	366	482	505	139	0	0	0
Construction	35	437	331	331	331	0	0	0	0
Mach.& Equip.	0	0	0	116	139	139	0	0	0
A & E and Admin.	4	46	35	35	35	0	0	0	0
Indirect Workers	36	446	338	444	466	128	0	0	0
Total Employment	**75**	**929**	**704**	**926**	**971**	**267**	**0**	**0**	**0**
Direct Earnings	$2.03	$25.09	$19.01	$25.27	$26.52	$7.52	$0.00	$0.00	$0.00
Indirect Earnings	$1.22	$15.06	$11.41	$15.01	$15.73	$4.32	$0.00	$0.00	$0.00
Total Earnings	**$3.25**	**$40.15**	**$30.42**	**$40.28**	**$42.25**	**$11.84**	**$0.00**	**$0.00**	**$0.00**
Operations Phase:									
Direct Workers	0	0	0	0	0	30	60	60	60
Indirect Workers	0	0	0	0	0	26	53	53	53
Total Employment	**0**	**0**	**0**	**0**	**0**	**56**	**113**	**113**	**113**
Direct Earnings	$0.00	$0.00	$0.00	$0.00	$0.00	$3.53	$3.53	$3.53	$3.53
Indirect Earnings	$0.00	$0.00	$0.00	$0.00	$0.00	$0.89	$1.78	$1.78	$1.78
Total Earnings	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$4.42**	**$5.31**	**$5.31**	**$5.31**
Combined Phases:									
Direct Workers	39	483	366	482	505	169	60	60	60
Indirect Workers	36	446	338	444	466	154	53	53	53
Total Employment	**75**	**929**	**704**	**926**	**971**	**323**	**113**	**113**	**113**
Direct Earnings	$2.03	$25.09	$19.01	$25.27	$26.52	$11.05	$3.53	$3.53	$3.53
Indirect Earnings	$1.22	$15.06	$11.41	$15.01	$15.73	$5.21	$1.78	$1.78	$1.78
Total Earnings	**$3.25**	**$40.15**	**$30.42**	**$40.28**	**$42.25**	**$16.26**	**$5.31**	**$5.31**	**$5.31**

Indirect employment and earnings were estimated based on Washington State input/output multipliers obtained from IMPLAN (1996-Version), an economic impact model jointly developed by the U.S. Forest Service and University of Minnesota. The multipliers from which changes in total employment (earnings) can be calculated from a unit change in direct employment (earnings). The indirect multipliers (consisting of total multipliers less the direct components - always 1.0), are given in Table 6.

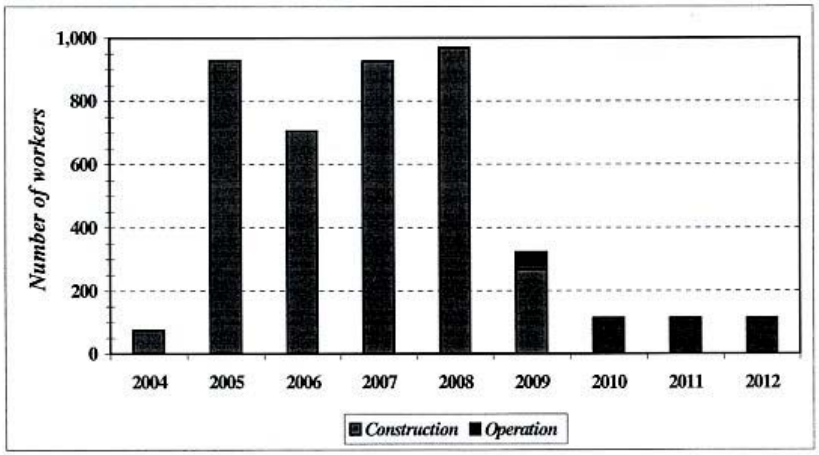
Table 6. Indirect Multipliers Used for Brightwater Impact Analysis

Phase/Measure	*Indirect Multiplier*
Construction	
Employment	0.923
Earnings	0.699
Operations	
Employment	0.878
Earnings	0.968

Source: IMPLAN

As shown in Table 5, total construction phase (direct and indirect) employment and earnings during the peak construction year, 2008, amount to 971 workers (= 505 direct + 466 indirect) and $42.5 million (= $26.5 million direct + $15.7 million indirect), respectively. Operations phase direct employment and earnings are projected at 60 workers and $5.3 million earnings in 2010, the steady-state year. With associated activity from these Brightwater WWTP construction and operations phases, total employment peaks in the year 2008 during construction at nearly 1,000 workers and then drops precipitously to a total of 113 workers (= 60 direct workers + 53 indirect workers) for the first year of full operation (see Figure 2).

Figure 2. Employment Impacts of the Brightwater WWTP, 2004-2012



Revenue Impacts of the Brightwater WWTP on the City of Woodinville

With annexation of the proposed site for the Brightwater WWTP, the City of Woodinville would be expected to realize substantial revenue flows directly from the construction phase but only modest revenues once Brightwater WWTP becomes fully operational (see Table 7).

Table 7. Brightwater WWTP - Revenue Base and City of Woodinville Tax Effects (Millions of 2002 Constant Dollars)

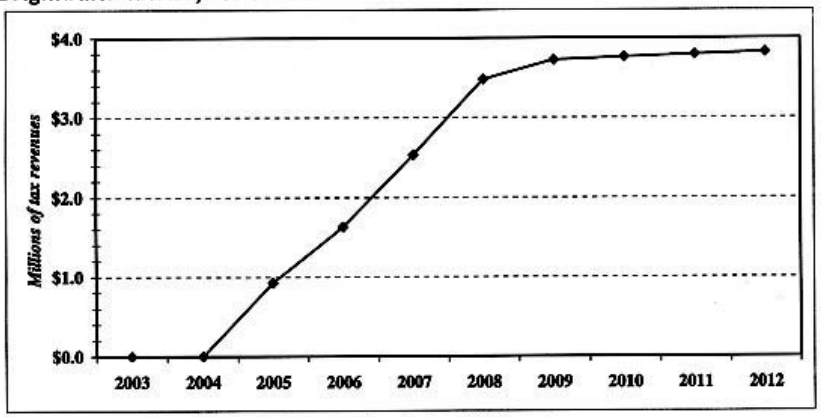
Tax Base and Rates	*2003*	*2004*	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*Total 2003-2012*
Land Conveyance	$34.8	$34.8									$69.6
Total Construction Outlays Subject to Sales & Use Tax	$0.0	$8.8	$109.1	$82.7	$106.4	$111.1	$28.4				$446.5
Value-Electricity Utilization During Operations	n/a	n/a	n/a	n/a	n/a	n/a	$0.33	$1.65	$1.65	$1.65	$5.28
City of Woodinville:											
Real Estate Excise Tax	n/a	n/a	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Sales & Use Tax	n/a	n/a	$0.93	$0.70	$0.90	$0.94	$0.24	$0.00	$0.00	$0.00	$3.72
Utility Tax	n/a	n/a	$0.00	$0.00	$0.00	$0.00	$0.01	$0.03	$0.03	$0.03	$0.11
Total Tax Revenue	n/a	n/a	$0.93	$0.70	$0.90	$0.94	$0.25	$0.03	$0.03	$0.03	$3.83

Notes: Real estate excise tax rate is 0.005%; sales & use tax rate is 0.85% and utility tax rate is 2.0%. Tax collections for the City of Woodinville do not begin until 2005, the first year after annexation.

Actual collections benefiting the City would occur upon annexing the Grace neighborhood area, which is anticipated by the end of 2004. As noted in the introduction to this study, there are four principal local tax base categories that would be affected directly by the project: the property tax, sales & use tax, real estate excise tax, and the utility tax.[8] Sales and use tax collections represent the major component of direct revenue contributions to the City following annexation of the area under consideration. The property tax is not applicable, as the project would be publicly-owned. The real estate excise tax, which is levied at 0.5 percent on property sales within the City is also not applicable, as sales transactions are assumed to be completed prior to 2005. Finally, the utility tax on electricity, levied at 2.0 percent of charges, is estimated to generate modest revenues during operations, some $33 thousand per annum. Over the projection period, 2005 through 2012, total revenues attributable directly to the project are estimated at $3.83 million in 2002 dollars (see Figure 3).

[8] As discussed in the introduction to this study, revenues attributable to the household-related expenditures of direct and indirect construction and operations workers as well as materials and supplies (consumables) used in facility operations are not considered. Similarly, user charges, such as for building permit fees, imposed by the City are not considered, as they reflect actual service costs. This is consistent with the study design, which does not include consideration of expenditure flows made by the City.

Figure 3. Cumulative Tax Revenues Collected by City of Woodinville from the Brightwater WWTP, 2003-2012



Note: Annexation of Grace Neighborhood occurs at the end of year 2004.

5. Economic and Fiscal (Revenue) Impacts Associated with Business Park Development

Economic Effects of Business Park Development

The analysis of economic impacts related to development of a planned business park is on the employment and earnings generated during construction and operations of the facility. Employment measured in terms of full-time-equivalents is given for both construction and operations, as shown in Table 8. Construction workers and architectural, engineering, and administrative (A/E&A) workers are included in the direct worker totals. Peak year employment was estimated at 255 workers. Cost share factors used to estimate worker counts used in the analysis of Brightwater WWTP employment impacts were applied for this scenario.

Direct operations workers were estimated based on information indicated in the section describing the project characteristics for the business park development scenario (Section 3 above). Operations employment of 645 workers is projected for 2004, increasing to 5,545 workers in 2009.

Direct employee compensation (wages and salaries) of construction workers were based on 2000 average annual covered wages for construction, adjusted for seasonality and inflated to 2002 dollars, based on Washington State Employment Security Department data. Again, the approach used was similar to that applied for the Brightwater WWTP scenario, only machinery and equipment workers were not included in the present case. The average annual wage applied for construction workers is $46,980 unadjusted and $51,676 adjusted (i.e., to account for seasonal downtime). Similarly, architecture, engineering and administration (A&E/A) worker annual earnings were based on average earnings for engineering management, at $54,261. Indirect earnings were estimated at $33,773, also, based on the procedures used previously for estimating impacts of the Brightwater system alternative.

Direct operations earnings were based on average wages general merchandise ($24,994), food stores ($23,311), department stores ($22,383) and eating and drinking establishments ($14,276) for the retail center; and, average wages for business services and engineering management ($47,350) for the office complex. These wage levels are based for electric, gas, and sanitary service workers, based on 2000 average annual covered wages for construction in Washington State, inflated to 2002 dollars.

Indirect employment and earnings were estimated based on Washington State input/output multipliers obtained from IMPLAN (1996-Version), an economic impact model jointly developed by the U.S. Forest Service and University of Minnesota. The multipliers from which changes in total employment (earnings) can be calculated from a unit change in direct employment (earnings). The indirect multipliers (consisting of total multipliers less the direct components - always 1.0) are given for each industry category (see Table 9).

Table 8. Business Park Employment and Earnings (Millions of 2002 dollars)

Category	*2003*	*2004*	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*
Construction Phase:										
Direct Workers:	19	116	255	236	157	157	79	0	0	0
Construction	17	105	230	213	142	142	71	0	0	0
A & E and Admin	2	11	24	22	15	15	7	0	0	0
Indirect Workers	19	119	259	240	160	160	80	0	0	0
Total Employment	38	235	514	476	317	317	159	0	0	0
Direct Earnings	$0.98	$6.04	$13.22	$12.24	$8.16	$8.16	$4.08	$0.00	$0.00	$0.00
Indirect Earnings	$0.65	$4.00	$8.76	$8.11	$5.40	$5.40	$2.70	$0.00	$0.00	$0.00
Total Earnings	$1.63	$10.04	$21.98	$20.35	$13.56	$13.56	$6.78	$0.00	$0.00	$0.00
Operations Phase:										
Direct Workers	0	645	2,057	3,365	4,237	5,109	5,545	5,545	5,545	5,545
Indirect Workers	0	358	1,141	1,867	2,351	2,834	3,076	3,076	3,076	3,076
Total Employment	0	1,003	3,199	5,232	6,588	7,943	8,621	8,621	8,621	8,621
Direct Earnings	$0.00	$24.90	$79.40	$129.90	$163.55	$197.21	$214.03	$214.03	$214.03	$214.03
Indirect Earnings	$0.00	$16.09	$51.30	$83.91	$127.39	$138.26	$138.26	$138.26	$138.26	$138.26
Total Earnings	$0.00	$40.99	$130.70	$213.81	$290.94	$335.47	$352.29	$352.29	$352.29	$352.29
Combined Phases:										
Direct Workers	19	761	2,312	3,601	4,394	5,266	5,624	5,545	5,545	5,545
Indirect Workers	19	477	1,400	2,107	2,511	2,994	3,156	3,076	3,076	3,076
Total Employment	38	1,238	3,713	5,708	6,905	8,260	8,780	8,621	8,621	8,621
Direct Earnings	$0.98	$30.94	$92.62	$142.14	$171.71	$205.37	$218.11	$214.03	$214.03	$214.03
Indirect Earnings	$0.65	$20.09	$60.06	$92.02	$132.79	$143.66	$140.96	$138.26	$138.26	$138.26
Total Earnings	$1.63	$51.03	$152.68	$234.16	$304.50	$349.03	$359.07	$352.29	$352.29	$352.29

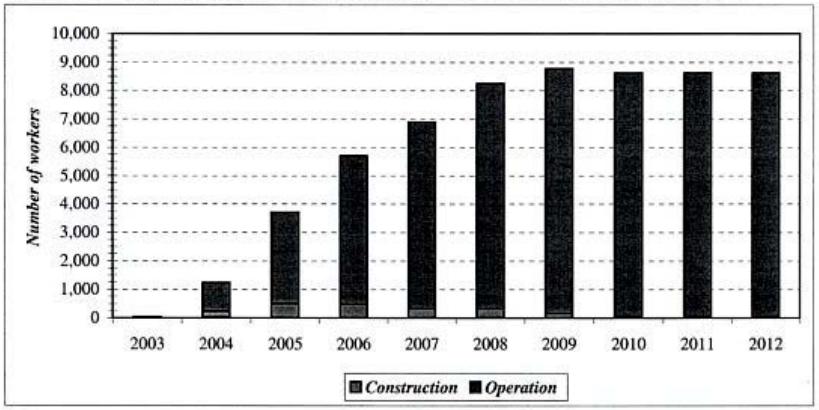
Table 9. Indirect Multipliers Used for the Brightwater Impact Analysis

Phase/Measure	*Indirect Multiplier*
Construction	
Employment	0.923
Earnings	0.699
Operations	
Employment	
General Merchandise	0.289
Grocery Store	0.269
Department Store	0.347
Eating & drinking places	0.291
Management & consulting	0.703
Earnings	
General Merchandise	0.669
Grocery Store	0.301
Department Store	0.409
Eating & drinking places	0.573
Management & consulting	0.669

Source: IMPLAN

As shown in Table 8, total construction phase employment and earnings during the peak construction year, 2005, amount to 514 workers (= 255 direct workers + 259 indirect workers) and $22.0 million earnings (= $13.22 million direct + $8.76 million indirect), respectively. Operations phase total employment and earnings are projected at 8,621 workers (= 5,545 direct workers + 3,076 indirect workers) and $352.3 million earnings (= $214 million direct + $138.3 million indirect) in 2010, the steady-state year (Figure 3).

Figure 4. Employment Impacts of Business Park Development, 2004-2012



Revenue Impacts of the Business Park on the City of Woodinville

With annexation of the proposed business park site for the Brightwater WWTP, the City of Woodinville would be expected to realize substantial revenue flows directly from both construction and operation of the planned business park, as shown in Table 10.

As in the case of the Brightwater WWTP scenario, the actual tax collections benefiting the City would occur upon annexing the subject area, which is anticipated by the end of 2004. As noted in the introduction to this study, there are four principal local tax base categories that would be affected directly by the project: the property tax, sales & use tax, real estate excise tax, and the utility tax. Sales and use tax collections represent the major component of direct revenue contributions to the City following annexation of the area under consideration. A total of $9.5 million in collections from this source are projected between 2005 and 2010. The property tax is also a major revenue source from the business park project, with projected revenues over the 2005 to 2010 period amounting to $2.5 million. The real estate excise tax, which is levied at 0.5 percent on property sales within the City, is applicable on sales transactions in 2005 (one third of all land sales are assumed to be completed in that year), with revenues of $115,000 estimated. Finally, the utility tax on electricity, levied at 2.0 percent of charges, is estimated to generate modest revenues during operations, some $28,000 per annum. Over the projection period, 2005

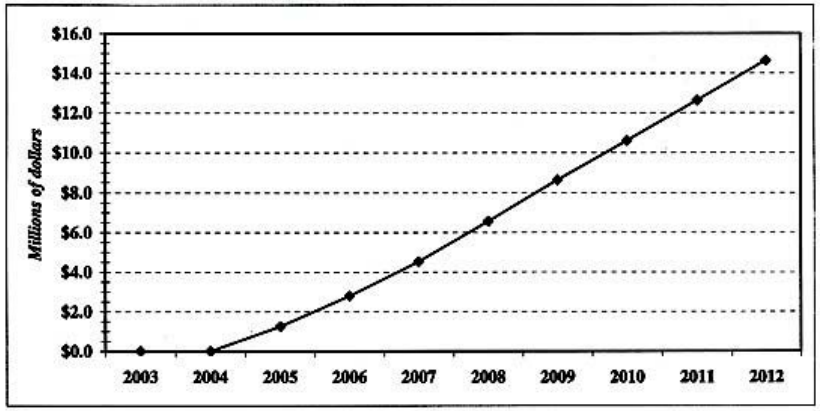
through 2012, total revenues attributable directly to the project are estimated at $14.64 million (Figure 5).

Table 10. Business Park Revenue Base and City of Woodinville Tax Effects (Millions of 2002 Constant Dollars)

Tax Base and Rates	*2003*	*2004*	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*Total 2003-2012*
Project-Related Tax Base:											
Land Conveyance	$23.1	$23.1	$23.2								$69.4
Total Construction Outlays											
Subject to Sales & Use Tax	$4.3	$26.3	$57.5	$53.2	$35.5	$35.5	$17.7	$0.0	$0.0	$0.0	$230.0
Value of Sales											
During operations	$0.0	$20.8	$66.3	$108.4	$136.5	$164.6	$178.6	$178.7	$178.7	$178.7	$1,211.3
Assessed Property Value	$23.2	$48.7	$95.6	$155.1	$212.3	$250.5	$288.6	$307.7	$307.7	$307.7	$1,997.1
Value of Electricity Utilization											
During Operations	$0.0	$0.2	$0.6	$0.9	$1.1	$1.3	$1.4	$1.4	$1.4	$1.4	$9.6
City of Woodinville											
Real Estate Excise Tax	$0.00	$0.00	$0.12	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.12
Property Tax	$0.00	$0.00	$0.07	$0.14	$0.23	$0.32	$0.38	$0.44	$0.47	$0.47	$2.52
Sales & Use Tax	$0.00	$0.00	$1.05	$1.37	$1.46	$1.70	$1.67	$1.52	$1.52	$1.52	$11.81
Utility Tax	$0.00	$0.00	$0.01	$0.02	$0.02	$0.03	$0.03	$0.03	$0.03	$0.03	$0.19
Total Tax Revenue	$0.00	$0.00	$1.25	$1.54	$1.72	$2.05	$2.08	$1.98	$2.01	$2.01	$14.64

Notes: Real estate excise tax rate is 0.5%; property tax rate is 1.51437 per $1,000 of assessed value; sales and use tax rate is 0.85%; and utility tax rate is 2.0%. Tax collections for the City of Woodinville do not begin until 2005, the first year after annexation.

Figure 5. Cumulative Tax Revenues Collected by City of Woodinville from Business Park Development, 2003-2012



6. Potential Stigma Effects

A growing literature exists that documents reductions in property values around noxious facilities, including hazardous chemical and radioactive waste facilities, and solid waste landfills. Other studies have been performed on related negative externalities of groundwater contamination and high voltage transmission power lines. Previous research on wastewater treatment facilities and property values generally supports the notion that there is a slight negative relationship between proximity to these sites and residential sales values. This relationship becomes less apparent with increasing distance from the site, tapering off to no effect at some distance, depending upon the size of the facility. The nature of toxicity can also affect the reduction in property values; for instance, previous research has found that a larger negative effect is associated with hazardous (e.g., chemical and radioactive) waste than for non-hazardous materials. Odor from industrial facilities can also have a depressing effect on nearby residential property values.

If the Brightwater WWTP was sited in the proposed annexation area of Woodinville, what would be the potential impacts on nearby residential property values? Given the research results elsewhere, would there be a consequent loss in residential property values within the Grace neighborhood? Although more research is required to provide a more definitive answer, it is not expected that the siting of the wastewater treatment facility would have a negative impact on nearby residential property values, assuming the treatment plant incorporates state-of-the-art technology that can eliminate off-site odors associated with a wastewater treatment facility. Other unanswered questions, but clearly matters of concern for the City of Woodinville are the effects on future development within the annexation area and neighboring areas. Will there be an associated "stigma" effect for the City of Woodinville, affecting future growth and development? Surprisingly little attention has been directed toward this issue for wastewater treatment facilities. Given the almost ubiquitous presence of these facilities across the city and town landscape, negative or "stigma" effects are not expected assuming that odor control at the treatment plant is successful and odors are not detectable off-site, as claimed in the DEIS.

7. Summary and Conclusion

This study provides a comparative analysis of the economic and fiscal impacts of the (1) proposed Brightwater WWTP and (2) a planned business park consisting of a retail center and office complex, in the Grace neighborhood, north of the City of Woodinville. Each of these development scenarios was analyzed to determine the potential economic and fiscal implications for the City of Woodinville, assuming the area is annexed in the near future. In particular, the study provides an answer to this principal question: what is the stream of revenues and economic effects of constructing and operating the Brightwater WWTP in the Grace neighborhood compared with the planned business park scenario? In addition, is there any associated stigma effects on property values with these two alternatives?

Table 11 indicates the revenue and economic implications for each of the development scenarios in the Grace annexation area. Note that total employment represents the combined employment generated during both construction and operations phases. Moreover, it includes direct employment and as well as induced and indirect (or spinoff) employment associated with the respective development scenarios. As shown in the table, employment differences between the development scenarios are considerable. Peak construction employment for the Brightwater WWTP development is estimated at 971 workers in year 2008; for the business park the comparable figure is 514 workers in year 2005, for a difference of 415 workers in favor of the Brightwater WWTP. During operations, however, the total employment results are reversed. Total steady-state operations employment, which occurs in year 2010, is estimated at 113 workers under the Brightwater WWTP scenario and 8,621 workers under the business park scenario, for a difference of 8,508 workers in favor of the business park development. The results for worker earnings are similar in pattern. For the Brightwater WWTP development scenario, total construction phase earnings (including direct and indirect components) are estimated at $42.3 million in the peak year, 2008; whereas, construction phase earnings for the planned business park development are estimated at $22.0 million in the peak year, 2005. Operations phase earnings for the steady-state year (2010) are estimated at $5.3 million for the Brightwater WWPT scenario and $52.3 million for the business park scenario.

Revenue impacts on the City of Woodinville have also been shown to differ substantially between the two development scenarios. The City is projected to receive $3.7 million over the projection period 2005 through 2010 (cumulative figure is not presented in the table); however, the on-going annual figure during the steady-state period (2011-2030) is only $33,000 under the Brightwater WWTP scenario. The comparable figures for the planned business park are $12.4 million over the 6-year projection horizon (2005-2010) and $2.1 million annually for the steady-state period (2011-2030), a difference of $8.8 million during the projection period and $1.98 million per annum during steady-state, in favor of the business park scenario.

Clearly, the City of Woodinville stands to benefit from increased revenue flows under both scenarios, but at a dramatically greater magnitude assuming the business park is developed. The on-going revenue flow under the business park scenario is over 50 times as great as the Brightwater WWTP scenario.

The discussion on the potential stigma effects of siting a wastewater treatment facility presented in the study suggests that the effects would be at the most only modest and probably insignificant, assuming odor control methods are successful and that odor will not be detectable off-site, as claimed in the DEIS.

Table 11. Summary Table of Revenue and Economic Effects of Business Park and Brightwater WWTP on City of Woodinville, 2003-2012

Development Scenario	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Business Park										
Total Employment	38	1,238	3,713	5,708	6,905	8,260	8,780	8,621	8,621	8,621
Construction	38	235	514	476	317	317	159	0	0	0
Operations	0	1,003	3,199	5,232	6,588	7,943	8,621	8,621	8,621	8,621
Total Earnings	$1.6	$51.0	$152.7	$234.2	$304.5	$349.0	$359.1	$352.3	$352.3	$352.3
Construction	$1.6	$10.0	$22.0	$20.4	$13.6	$13.6	$6.8	$0.0	$0.0	$0.0
Operations	$0.0	$41.0	$130.7	$213.8	$290.9	$335.5	$352.3	$352.3	$352.3	$352.3
Total tax revenue	$0.00	$0.00	$1.25	$1.54	$1.72	$2.05	$2.08	$1.98	$2.01	$2.01
Brightwater WWTP										
Total Employment	0	75	929	704	926	970	323	113	113	113
Construction	0	75	929	704	926	970	267	0	0	0
Operations	0	0	0	0	0	0	56	113	113	113
Total Earnings	$0.00	$3.25	$40.15	$30.42	$40.28	$42.25	$16.26	$5.31	$5.31	$5.31
Construction	$0.00	$3.25	$40.15	$30.42	$40.28	$42.25	$11.84	$0.00	$0.00	$0.00
Operations	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$4.42	$5.31	$5.31	$5.31
Total tax revenue	$0.00	$0.00	$0.93	$0.70	$0.90	$0.94	$0.25	$0.03	$0.03	$0.03
Net Difference										
Business Park vs. Brightwater										
Total Employment	38	1,163	2,784	5,004	5,979	7,290	8,457	8,508	8,508	8,508
Construction	38	160	-415	-228	-609	-653	-108	0	0	0
Operations	0	1,003	3,199	5,232	6,588	7,943	8,565	8,508	8,508	8,508
Total Earnings	$1.63	$47.78	$112.53	$203.74	$264.22	$306.78	$342.81	$346.98	$346.98	$346.98
Construction	$1.63	$6.79	-$18.17	-$10.07	-$26.72	-$28.69	-$5.06	$0.00	$0.00	$0.00
Operations	$0.00	$40.99	$130.70	$213.81	$290.94	$335.47	$347.87	$346.98	$346.98	$346.98
Total tax revenue	$0.00	$0.00	$0.32	$0.83	$0.81	$1.10	$1.83	$1.95	$1.98	$1.98

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C7
TOWN OF WOODWAY

FINAL
ENVIRONMENTAL
IMPACT STATEMENT

Brightwater
Regional Wastewater
Treatment System

COMMENTS AND RESPONSES

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17 January, 2003

RECEIVED
JAN 21 2003
ENVIRONMENTAL PLANNING DIVISION

Michael Popiwny
Brightwater Siting/Mitigation Project Manager
King County Wastewater Treatment Division
201 South Jackson Street
Seattle, WA 98104-3855

Re: BrightWater DEIS Review and Comments

Dear Mr. Popiwny:

The Town of Woodway has reviewed the Draft EIS related to the development of the BrightWater Wastewater Treatment Plant in Snohomish County as well as the related conveyance systems. As you are aware, Woodway has followed this project with great interest since its inception, and has worked in a spirit of cooperation with King County to help the County find the optimal solution to the region's wastewater treatment needs. In that same spirit, we are submitting our comments on the DEIS for your consideration.

C7-1 These 48 comments are compiled in the accompanying Attachment A. They have been extracted from a report prepared for the Town of Woodway by our consultant, EDAW. The report is enclosed to assist in understanding the context of the comments. Please note that Woodway's comments are located in the right-hand column of the matrix.

C7-2 There were two issues in particular that we wish to emphasize. First, it is clear that additional SEPA analysis is needed on the conveyance system proposal. Specifically, the DEIS is far too vague about the potential impacts in the immediate area of the portals, and we expect to see some supplemental SEPA documentation done on these areas once a conveyance route is chosen.

C7-3 The second issue concerns the option to lid the Brightwater plant should the Unocal site be chosen. This must be studied with more care. We feel very strongly that lidding the plant is the only urban design strategy appropriate for the Unocal site. The neighborhood is far too urban and densely settled to build otherwise. Furthermore, the lid should create a useable urban amenity for the residents of both Woodway and Edmonds neighborhoods. It appears from the DEIS that King County is potentially willing to construct the basic concrete lid, but nothing more. King County must commit to creating an attractive environment on the lid should that prove the ultimate direction of the project.

Response to Comment C7-1

King County is responding individually to all comments in this cover letter and Attachment A. The accompanying November 26, 2002, report by EDAW, *Final Report on the Review of the King County Brightwater Regional Wastewater Treatment System Draft Environmental Impact Statement*, has been reviewed by the Brightwater team and has been considered in writing the Final EIS.

Response to Comment C7-2

Substantial additional information on the conveyance system is provided in Chapter 3 and Appendix 3-B, Project Description: Conveyance of the Final EIS. Additional information on impacts associated with the refined project description is included in all chapters of the Final EIS.

Response to Comment C7-3

A revised project description in Chapter 3 of the Final EIS provides additional detail on the proposed structural lid for the potential multimodal facility at Unocal.

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C7-4 Thank you for the opportunity to comment on the DEIS and for making available the necessary funding. While the task was at times daunting, it was a very insightful process that assisted our community in identifying those values and mitigation issues most important to Woodway. We are formally requesting that each of the following issues be thoroughly addressed in the Final EIS.

Very truly yours,

Carla A. Nichols
Mayor of Woodway

cc: Joe Cloud – EDAW, Inc.
Bill Trimm
Woodway Town Council

Encl:

Response to Comment C7-4

Thank you for your comment.

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ATTACHMENT A

The comments listed below are intended to serve as the official comments from the Town of Woodway to King County on the Brightwater DEIS. It is expected that they will addressed by King County and its consultants in the FEIS. Please note that the majority of the comments relate to the construction of the Brightwater plant at the UnoCal site. These comments are rendered moot if the County identifies the Route 9 site as the selected alternative.

GENERAL COMMENTS

C7-5 1. Range of Alternative Treatment Processes: The DEIS provides three action alternatives that provide different locations for the proposed Brightwater facilities, conveyance routes, and portal sites. Development of alternatives based on locational criteria does not provide the public and interested parties a full understanding of the potential range of alternatives. The DEIS fails to consider any alternative treatment processes to the typical activated sludge treatment process used to develop the land intensive plant prototypes used in the impact analysis. Such alternative processes could minimize impacts to the surrounding community in several ways, including improved odor control and reduced land demand for facilities. Reducing land requirements would allow more of the site to be devoted to community amenities or vegetative buffers protecting surrounding land uses and potentially providing enhanced habitat areas. It could potentially reduce construction impacts related to earth moving activities.

If the Unocal site is carried forward, King County should consider choosing a process technology that would allow for a more compact plant with fewer impacts to the site than is currently proposed. Illustrating only conventional activated sludge treatment technology as the sole alternative for the site is an incomplete review, and gives a false sense of the range of treatment technologies available to public officials for use in the Brightwater plant. Nowhere in the DEIS are alternative process technologies discussed. Section 2.2.3 should be revised to include a discussion of potential alternative technologies, and justify why only a single choice of technologies was reviewed.

C7-6 2. Future Environmental Review: The DEIS often states that appropriate mitigation measures for project-specific impacts will be defined after a Biological Assessment (BA) and additional environmental review are completed. Mitigation measures identified in the BA should be applied to the project and incorporated into the Final EIS. The Final EIS should not be released prior to completion of the BA.

C7-7 3. Future Environmental Review of Conveyance Systems: Analysis of the Conveyance system routes is done in a very general way, which is appropriate given the level of design done to date, and the width of the corridors analyzed. However, this leaves many details of the conveyance impacts unknown, especially regarding the specifics of selection of portal sites and development of portal structures. King County needs to identify the process by which these specific impacts will be analyzed. The most appropriate method would be for the County to prepare a Supplemental EIS to address the project-specific impacts of portals. Woodway would like the FEIS to specifically state what the expectations for this review will be, and how it will be accomplished.

C7-8 4. Coordination with Edmonds Crossing: The DEIS does not address how development of Brightwater at the Unocal site could assist/coordinate with the development of the future co-located Edmonds Crossing project at the site. If the Unocal site is chosen, a supplemental

Response to Comment C7-5

The proposed type of treatment plant and the specific processes are described in detail in Chapter 3 of the Final EIS and Appendix 3-A, Project Description: Treatment Plant. The proposed treatment process consists of a split flow membrane bioreactor (MBR) process.

In the Draft EIS, a conservatively sized conventional activated sludge (CAS) process was considered. This treatment process is widely used throughout the United States to provide secondary treated effluent. In comparing alternatives for secondary treatment, it was recognized that the MBR process would produce an effluent of higher quality than CAS, benefiting the environment through a lower discharge of pollutants to Puget Sound. However, the MBR technology is more expensive than CAS on a unit flow basis. Configuring an MBR to accept peak flows and loads would render it infeasible due to high cost. Therefore, the concept of a split flow MBR system was developed, in which the MBR process would be configured to accommodate a daily flow in excess of the average wet weather flow (AWWF), but below the peak day flows. The maximum capacity that could be treated by the MBR is termed the secondary treatment, or split flow, threshold. Flows in excess of the secondary treatment threshold constitute a split stream that would be routed around the MBR. The split stream would be treated using an alternative process better suited to hydraulic peaks, such as ballasted sedimentation. The split stream would be blended with the MBR effluent and disinfected prior to discharge from Route 9. At Unocal, each stream would be disinfected independently and then blended together prior to discharge. The MBR process will also occupy less land than CAS, thereby increasing the area available for mitigation and environmental enhancement as shown in the layouts in Chapter 3 of the Final EIS.

Response to Comment C7-6

Section 7 of the Endangered Species Act requires federal agencies granting permits or funding for a proposal to identify, evaluate, and assess the potential impacts of such a proposal on endangered or threatened species. King County has assessed the impacts and identified mitigation measures for each alternative in the EIS. However, federal agencies have indicated that King County should submit a Biological Assessment for the selected alternative only. Thus, once the Final EIS has been issued and the King County Executive has selected a treatment plant site, conveyance alignment, and outfall location, King County will prepare a Biological Assessment and submit it to federal agencies for consideration.

Response to Comment C7-7

Both the Draft EIS and the Final EIS include a reasonably thorough discussion of the probable significant adverse environmental impacts and reasonable mitigation measures for those identified impacts beyond that characterized in this comment. The Draft EIS was issued at a point in time when a certain level of information was known relating to the probable significant adverse impacts of the proposal and possible ways to reasonably mitigate those impacts. In areas where there was uncertainty regarding the impacts, the Draft EIS presented, consistent with SEPA Guidelines, a worst-case analysis of impacts. In other areas, the Draft EIS indicated that ongoing analysis was under way and that additional information would be forthcoming. Since issuance of the Draft EIS in late 2002, considerable additional analysis has been conducted, as is the case on any large project, to further define and develop the proposal and respond to Draft EIS comments.

Many of the details requested in this comment letter are necessary for an EIS relate to information either that does not involve significant adverse impacts or that is important prior to issuance of actual permits but may not be essential to include in an EIS. Such information may not be included in the Final EIS, because it is not required and King County is mindful of the need to keep the Final EIS as readable as possible. Any additional analysis that has been conducted that relates to probable significant adverse impacts that will not be mitigated or regulated into non-significance is included as part of the Final EIS analysis. The Final EIS provides additional specificity with respect to both conveyance and portal locations and impacts. There is no practical or legal need under SEPA to include this additional analysis in the form of a Supplemental EIS.

Response to Comment C7-8

The Draft EIS did evaluate the potential environmental impacts associated with the co-location of the Brightwater project at the Unocal site and the Edmonds Crossing project in Chapters 3, 4, 5, 6, 7, 8, 10, 11, 12, 13 and 16. The impacts of this co-location and analysis of the lid sub-alternative are also evaluated in further detail in this Final EIS in Chapter 3 and Appendix 3-A, Project Description: Treatment Plant. There is no practical or legal need under SEPA to include this additional analysis in the form of a Supplemental EIS, should the Unocal site be chosen.

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C7-8 environmental review that addresses the Edmonds Crossing project in conjunction with the Brightwater project should be undertaken. Again, a reduced site footprint for the Brightwater plant based on alternative treatment technologies would provide additional space for development of this major multi-modal station.

COMMON TO BOTH UNOCAL AND ROUTE 9 ALTERNATIVES

Earth/Geology

C7-9 5. Impacts associated with vibration would affect properties within Woodway's jurisdiction, particularly with construction of portals and pump stations. How will King County ensure that the local jurisdictions like Woodway are involved in the final conveyance route siting and design?

Odor and Air Quality

C7-10 6. Woodway requests that King County quantify the type and standards for odor control treatment that will be provided at pump stations and force main discharge points for the conveyance system in the Final EIS.

UNOCAL SITE AND CONVEYANCE SYSTEM

Aesthetics and Views

C7-11 C7-12 7. The DEIS discusses the concept of a structural lid for the UnoCal site (3.5.1.8, P.3-23, Vol. 1). This discussion is inadequate to allow the reader to gain a clear picture of the nature of this lid, nor is it accompanied by informative graphics. Please expand the description for the lid to define what specific uses could occur on the lidded area, which agency would have operational and maintenance responsibilities for the space on top of it, and what type of access the public might have to it. Include appropriate graphics. Woodway believes that any wastewater treatment plant constructed on the Unocal Site should be lidded, and that the lid should be landscaped as functional public open space. Woodway is not in agreement that further development of the environment on top of the lid be undertaken by parties other than King County, as stated elsewhere in the DEIS (DEIS page 16-40, Vol. II).

C7-13 8. Mitigations discussion does not recognize that planting vegetation for screening of buildings at the UnoCal site could result in obscuring of valued views of Puget Sound from points in Woodway and elsewhere, depending on the height and location of the selected vegetation. This issue can only be resolved through review of finer scale future site design options (should UnoCal site be selected for further development). The current SEPA process addresses the site in too generalized a manner. The FEIS should address the process for selection of the final site design, and identify opportunities for citizens to have input into that design selection process. It should also identify the potential for screening vegetation to obscure valued views of the Puget Sound.

C7-14 9. The City of Edmonds design process will regulate site design and permitting at the UnoCal site, yet the closest neighbors are residents of the Town of Woodway. How will King County insure that the citizens of Woodway have a voice in the design process?

C7-15 10. Visual simulations contained in the DEIS are useful in helping understand future site design for the Brightwater plant. However, they do not allow the reader to understand the relationship between buildings and topography for the Unocal site, particularly for adjacent residential neighborhoods in Woodway that are most affected by the plant. Please include site sections drawn to scale in the FEIS that show the relationship between residences, Pine Street, Olympic Park, periphery walls, plant structures, retaining walls, and topography.

Response to Comment C7-9

Please refer to Chapter 10 for a discussion of noise and vibration impacts and mitigation. Please refer to the responses to the City of Kenmore, Comment C3-51, and to the City of Shoreline, Comment C6-5, regarding future coordination efforts with affected jurisdictions.

Response to Comment C7-10

The technologies to be used are a combination of liquid phase (chemical injection) treatment, chemical based scrubbing, carbon filtration, and/or biofiltration. Two or three stage odor scrubbing will be utilized depending upon the results of King County's summer odor monitoring and sampling program. All locations which release air and have odor control facilities will be equipped with continuous air monitoring equipment at the discharge location to ensure the odor control equipment is functioning optimally and meeting the odor removal criteria. The monitoring will be conducted by King County. More information is provided in Appendix 5-B, Odor Analysis: Conveyance, of the Final EIS.

Response to Comment C7-11

Additional discussion of the "lid" sub-alternative, including appropriate graphics, is included in Chapter 3 and Appendix 3-A, Project Description: Treatment Plant, of the Final EIS.

Under the "Unocal Structural Lid" sub-alternative, the Brightwater Treatment Plant facilities would occupy the majority of the useable area of the site and the multimodal project would be constructed on top of a lid above the treatment facilities. The complete functionality of the multimodal facility, based on the Edmonds Crossing conceptual design titled "Revised Point Edwards Alternative," is incorporated into the conceptual lid design. The following components are included:

- Ferry holding lanes (7 total)
- Ferry traffic exit lanes (2 total)

- Bus terminal
- Rail terminal (below lid)
- Short-term, long-term, and employee vehicle parking (580 spaces total)
- Pedestrian access (elevator and escalator/stairs) to transport passengers from the ferry or bus terminal on the lid to the rail terminal below
- People mover to transport pedestrians from the lid to the ferry
- Stormwater from the lid treated in the treatment plant's stormwater ponds
- Four toll booths with an office above
- Bus stops and bus turn-around on Admiral Way.

The multimodal facility would be operated and maintained by the Washington State Department of Transportation and the City of Edmonds. The public would not have any additional access to the treatment plant. The public access would be limited to the multimodal facility, which would be above and separated from the treatment plant.

Response to Comment C7-12

Since publication of the Draft EIS the proposal for the Unocal plant site has been modified to include a lidded sub-alternative only in the event that the Edmonds Crossing multimodal facility continues to move forward. A lid solely for recreation or open space purposes was found to be too costly to be feasible with the Brightwater project. Please refer to the response to the City of Shoreline, Comment C6-5, regarding mitigation suggestions.

Response to Comment C7-13

The potential for landscape screening to not only provide a buffer to the treatment plan but also to screen views beyond and over the facility is likely to occur. It is possible to provide some relief by creating, for example, view "windows or passages" through the screening at various key viewshed locations and/or to select low growing plant materials that provide for foreground screening but do not extend into upper viewplanes or viewsheds.

The process for ongoing site and facility design and the community's role in this process, is described more fully in Chapter 3, Chapter 12 and Appendix 3-A, Project Description: Treatment Plant, of the Final EIS. The process of community input began with a series of Brightwater workshops held in 2002.

Response to Comment C7-14

Please refer to the response to Comment C7-13 in this letter.

Response to Comment C7-15

The project description in Chapter 3, Chapter 12, and Appendix 3-A, Project Description: Treatment Plant, of the Final EIS show illustrative sections through the Unocal site including a north-south section from Woodway neighborhoods, Pine Street, through site interiors, and down to the marsh.

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C7-16 11. The site layout as shown in Figure 3-8 shows the entire site as being occupied by the wastewater treatment plant. No strategies have been identified to use this public facility to benefit the community by connecting neighborhoods using a compact site design and pedestrian facilities. The EIS should evaluate a revised site plan that allows for the connection of Woodway to the Edmonds water front.

C7-17 12. Paragraph 3, page 12-11, Vol. II: The impacts text should be edited to read that "the removal of all existing mature upland forest vegetation from the interior side slopes…", thus making it unambiguous to the reader that the site will be deforested.

Flora and Fauna

C7-18 13. Woodway is concerned that forested habitats within the Town may potentially be affected outside of the Unocal site due to development of the conveyance system. Please clarify in the Final EIS whether or not the loss of forest and forest habitat would occur only on the Unocal site. If forestlands are affected off-site, please identify where these habitat impact areas are located. Similarly, please identify where vegetation would be affected off-site and address the amount of vegetation lost.

C7-19 14. If the Unocal Alternative is chosen, Woodway requests that the Final EIS analyze a site development plan that presupposes an alternative process system that requires a smaller site footprint. The reduction in excavated area with a more compact system would translate into fewer impacts to wetlands on-site.

C7-20 15. Woodway requests that the Final EIS not be released prior to completion of the BA. Mitigation measures identified in the BA should be addressed, and it should be specified as to how they would be applied to the Brightwater project.

Water Quality

C7-21 16. The DEIS does not clearly define the location of the Unocal conveyance systems in vertical and horizontal relationship to the Deer Creek Aquifer and well head protection areas within the Town of Woodway. Woodway requests that the Final EIS provide a graphic, equivalent to Figure 4-6 illustrating the Route 9 site, describing the relationship between the Unocal conveyance system with the Deer Creek aquifer, and water supply and wellhead protection zones for the Olympic View Water and Sewer District.

C7-22 17. Woodway requests that the Final EIS provide more specific mitigations that address potential impacts to the Deer Creek aquifer, Deer Creek water supply, Olympic View Well Head Protection areas, or Deer Creek Springs due to tunnel construction. This concern could be addressed through a more clear or specific statement about tunnel design location.

C7-23 18. The general mitigation measures addressed in Chapter 4 - Earth and Groundwater (pages 4-58 – 4-59, Volume I) do not specifically take into account the identification of private wells that are within the Unocal Alternative's conveyance routes. Woodway requests that the Final EIS address the following questions: 1) analyze the potential for disruption of flow to wells; 2) identify measures that would be taken to ensure adequate water flow to private wells; 3) specify alternative supplies of water King County would provide if disruption of private well waters could not be avoided; and 4) define how King County would compensate well owners for the disruption of water supply along the identified conveyance routes should their wells be affected by construction and operation of the conveyance system.

C7-24 19. Woodway requests that the Final EIS include an estimate of the quantities of material to be moved along the temporary construction dock during construction at the UnoCal site. Also, the

Response to Comment C7-16

Under the base alternative considered at the Unocal site, there would be no park areas located at the treatment plant site. In the "Unocal Structural Lid" sub-alternative, a structural "lid" would be constructed over the northern portion of the site to accommodate the proposed multimodal transportation facility, Edmonds Crossing. The multimodal facility would be a public facility, but public access would not be provided to the treatment plant.

Public access to the beach would remain the same as without the treatment plant at the Unocal site; the main beach access is via Admiral Way. Also, please refer to the responses to Comments C7-26, C7-28, and C7-30 in this letter.

Response to Comment C7-17

The referenced wording in Chapter 12 of the Draft EIS is accurate and complete as to describing the removal of existing vegetation from interior side slopes and upper hillside areas and its effect ("…denuded hillside…").

Response to Comment C7-18

Any potential loss of forested habitat in Woodway would be limited to the Unocal Site boundaries. The conveyance corridor would be tunneled to the site, and no candidate portal sites that would impact forest habitats are located in the city.

Response to Comment C7-19

Please refer to the response to Comment C7-5 in this letter.

Response to Comment C7-20

Please refer to the response to Comment C7-6 in this letter.

Response to Comment C7-21

The Final EIS provides several new geologic cross sections showing the relationship between the various tunnel alternatives (including the Unocal alternative) and Deer

Creek Springs, and has several figures showing the wellhead protection area Deer Creek Springs. Specifically this information is provided in Appendix 6-B, Geology and Groundwater.

Response to Comment C7-22

A more clear definition of tunnel alternative alignments has allowed additional numerical and qualitative analyses to be completed to evaluate the potential effects of the conveyance system on the Deer Creek Springs. These analyses show little potential for affect, primarily because the proposed tunnels are located in a deeper mixed aquifer/aquitard zone that is separated from the shallow aquifer supplying Deer Creek Springs by a regionally extensive aquitard, the Lawton Clay. However, King County recognizes the importance of the Deer Creek Springs complex to the community and is proposing precautionary monitoring to provide assurance that there are no adverse impacts on the springs.

Response to Comment C7-23

King County will be completing a comprehensive geotechnical exploration of the recommended conveyance route. This exploration will be designed to identify private water supply sources in the vicinity of conveyance line construction and to identify potential impacts to these water supplies resulting from the construction of these facilities. Every effort will be made to address potential impacts to water supplies through engineering designs appropriate for the conditions being encountered. We believe these engineering measures will ensure that water supplies are adequately protected and that there will be no disruptions to water supplies. In the event an unanticipated interruption of water supply should occur, King County is committed to ensuring that water will be provided to impacted residents and will take all measures necessary to provide the same level of water service as existed prior to the commencement of construction activities.

King County's proposed mitigation measures will be detailed in a Potable Water Replacement Plan to be developed prior to construction. The plan will include a survey of well owners in areas considered potentially vulnerable to aquifer depletion, identification of the existing water supply infrastructure in these areas, identification of King County staff responsible to implement the plan and the necessary chain of command, a detailing of the logistics necessary to deliver water or connect to existing water lines, and a pre-approved list of contractors to assist in hookups or water delivery.

Response to Comment C7-24

The barge dock was identified in the Draft EIS as a potential measure to mitigate traffic impacts; however, it is no longer included as a proposed project element for the Unocal site and is not included in the Final EIS. It is an optional mitigation measure that would be considered to reduce traffic impacts on surface streets. Should the barge dock be reconsidered for implementation at some future time, an evaluation would be conducted on the fate of the existing Unocal dock. If the temporary barge dock were not constructed, the existing Unocal dock would not be demolished, as it would be beyond the project scope of Brightwater.

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C7-24 Final EIS should identify dock design features that would ensure that transported materials are adequately contained so that they do not enter the near shore environment.

Transportation

C7-25 20. The Town of Woodway should be involved in the development of the Transportation Management Plan (TMP) and identification of proposed detour routes to make sure residents' concerns regarding cut-through traffic and detours are properly addressed. Additional traffic on Woodway Park Road and Pine Street will adversely affect pedestrian safety. Adequate curbs and sidewalks should be constructed by King County to ensure pedestrian safety.

C7-26 C7-27 C7-28 21. Under the Unocal Structural Lid Sub-Alternative, trail connection enhancements should be included. The DEIS states that further development on top of the lidded area would be accomplished by parties other than King County and would be evaluated under a separate National Environmental Policy Act (NEPA) and/or SEPA process (DEIS page 16-40, Vol. II). The Town of Woodway requests that the Final EIS address responsibility for lidding the Brightwater facility at Unocal and the funding source for park and trail development and maintenance, should the Unocal site be selected. As the agency responsible for the development of Brightwater, King County should also be responsible for appropriate mitigation measures. Trail connections to Olympic park are appropriate mitigations for project impacts. If these are not to be funded by King County, the Final EIS should explain how these will be accomplished.

C7-29 22. The Town of Woodway should be involved in the development of the Brightwater TMP to make sure non-motorized transportation facilities are included and properly addressed and mitigated. If the Structural Lid Sub-Alternative is chosen, Woodway should be involved in the site planning and encourage non-motorized trails and access points in the design.

C7-30 23. Woodway requests that the site design provide non-motorized access through the site connecting Woodway neighborhoods on top of the bluff to the Edmonds waterfront. Should the Unocal site be chosen, Woodway would like King County to identify this programmatic item in the Final EIS and commit to this objective.

C7-31 24. Woodway supports development of an alternative plan for transport of excavation materials using barges rather than trucks, provided that environmental degradation of the near shore environment can be avoided. We request that this alternative be evaluated in the Final EIS so that impacts can be compared.

Earth/Geology

C7-32 25. Impacts associated with vibration would affect properties within Woodway's jurisdiction, particularly with regard to portals and pump stations. How will King County ensure that the local jurisdictions like Woodway are involved in the final conveyance route siting and design

C7-33 26. Woodway requests that the Final EIS address how the effects of earth moving and grading will impact access to and operation of Woodway's Olympic Park (not to be confused with Edmonds' Olympic Beach Park), as well as the adjacent private residences. Please identify what design and construction measures will be taken to minimize the possibility that deforestation and grading activity on the bluff adjacent to Olympic Park will result in eventual erosion and failure of the bluff area where the park is located due to water infiltration and other related impacts. Mitigation that would eliminate or lessen adverse impacts to adjacent properties should also be identified.

C7-34 27. Woodway requests that the EIS address the potential for powerful vibrations related to the operation of wastewater treatment equipment to affect slope stability. What are the typical vibration levels that will be encountered? What equipment will produce these levels? What engineering mitigations will be employed to minimize the potential for damaging vibrations?

Response to Comment C7-25

A traffic plan addressing mitigation measures would be prepared for all agencies affected by construction and is included as a mitigation measure in the Final EIS. This plan would include time-of-day restrictions, necessary improvements to the roadway network, types of closures, pedestrian and bicycle detours, traffic routing/circulation management and traffic control measures for safety on the affected roadways. These measures would be finalized by King County and would be coordinated with affected agencies during permitting. Safe access and adequate non-motorized facilities would be provided for bicyclists and pedestrians during construction. Final TMP approval would be coordinated with the affected local agencies, including the Town of Woodway.

Response to Comment C7-26

King County would coordinate directly with the City of Edmonds Parks and Recreation Department and the Town of Woodway about possible onsite recreation amenities. If the Unocal site is selected for the wastewater treatment plant, a trail system may be conceived during the final design stage of the treatment plant that would allow pedestrian access to the Puget Sound shoreline through or near the site.

Response to Comment C7-27

Please refer to the responses to Comment C7-12 in this letter regarding use of a lid and to the City of Shoreline, Comment C6-5, regarding mitigation suggestions.

Response to Comment C7-28

If the Unocal site is chosen as the location for the Brightwater Treatment Plant, King County will coordinate with the Town of Woodway officials to identify measures to ensure Olympic View Park remains accessible throughout the duration of construction and operation of the facility. The addition of other

trail connections will also be considered as appropriate mitigation funded by the Brightwater project.

Response to Comment C7-29

Please refer to the response to Comment C7-25 in this letter. The traffic management plan would address the potential mitigation for non-motorized facilities as appropriate. Specific mitigation measures would be coordinated with the Town of Woodway during the permitting process.

Response to Comment C7-30

Design suggestions from all key stakeholders, including the Town of Woodway, would be considered during design workshops for the selected site. These workshops would form the basis of community agreements for mitigation.

Response to Comment C7-31

Please refer to the response to Comment C7-24 in this letter.

Response to Comment C7-32

Please refer to Chapter 10 for a discussion of noise and vibration impacts and mitigation. Please refer to the responses to the City of Kenmore, Comment C3-51, and to the City of Shoreline, Comment C6-5, regarding future coordination efforts with affected jurisdictions.

Response to Comment C7-33

Slope stability of areas adjacent to, or part of, the Brightwater Treatment Plant construction sites will be evaluated during the design phase to ensure that existing slope stability is maintained during and after construction. The additional evaluations may include geotechnical borings, soil sampling and testing, and installation of groundwater monitoring or slope stability monitoring instrumentation as deemed necessary by the design engineers. Analyses of slope stability will be part of receiving necessary jurisdictional clearing and grading permits. Please refer to Chapter 4 of the Final EIS for steep slope areas that have been identified along the Brightwater System.

Response to Comment C7-34

Wastewater treatment plant equipment producing vibratory forces to foundations, and mitigating measures for equipment vibration, are addressed in Appendix 10-A, Noise and Vibration: Treatment Plant, of the Final EIS. Operational vibration impacts would be mitigated by isolation of process equipment vibratory forces from structure foundations. Reciprocating engines for onsite power generation would also be installed on heavy inertial foundations for mitigation of vibration transmission to the ground. Please refer to the response to the City of Woodinville, Comment C5-108.

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C7-35 28. The Town of Woodway requests that King County model the treatment plant design during an earthquake event to determine whether or not the design of the plant would withstand worst-case seismic activity and include the results in the Final EIS. Please address effects of a major seismic event on the stability of the retaining wall and potential effects on Pine Street, as well as mitigation for such effects. The magnitude of the design seismic event should be identified in the Final EIS.

Odor and Air Quality

C7-36 29. Woodway requests that King County investigate and include moving odorous units to the lower bench in the Final EIS. These include the influent pump force main discharge, bar screens, grit removal tanks, primary sedimentation tanks and biosolids handling units (thickening and digestion). This will move these odorous units further from the nearest residential areas.

C7-37 30. Please confirm that planned redundant units identified on page 5-20, Vol. I, would be capable of handling digester cleaning without release of odors. The Final EIS should include a more in-depth, quantified discussion on this issue.

C7-38 31. VOC control is not mentioned for liquid process treatment units. Covers should be provided over the primary and secondary clarifiers that discharge to odor treatment units including carbon adsorption units. Woodway requests that King County provide additional detail in the Final EIS on VOC control systems that would be provided for the liquid process treatment units.

Light and Glare

C7-39 32. Woodway requests that a three dimensional lighting design model be conducted to predict light pollution from buildings and the site as a preventative mitigation measure that could lessen the potential for future impacts. To minimize light pollution, Woodway has an adopted "dark skies" policy intended to discourage excessive use of outdoor area lighting. This policy is summarized in Town Resolutions #41, #49 and Chapter 14 of the zoning code. The FEIS should address how the proposed lighting at the Unocal site will minimize light spillage onto Woodway properties. The FEIS should address how the proposed lighting at the Unocal site will minimize light spillage onto Woodway properties.

Noise and Vibration

C7-40 33. Woodway requests that King County commit to preparation of a Noise Control Plan for the Brightwater plant that will identify predicted noise sources and attenuation measures in detail. The DEIS addresses these issues in general terms, but does not provide any quantitative consideration of mitigation. It is requested that the Noise Control Plan be included in the Final EIS, should the Unocal site be chosen as the final Preferred Alternative selected for construction of the Brightwater Plant.

C7-41 34. Woodway requests that King County quantitatively address the issue of flowing water noise in a Noise Control Plan for the Brightwater plant to be included in the Final EIS.

C7-42 35. Woodway requests that King County include vibration isolation mounts on all high-inertia rotating equipment such as centrifuges. The County should provide a quantitative evaluation of expected frequency and duration of vibration impacts in the Final EIS. Include a discussion of residential community standards with regards to vibration levels.

C7-43 36. Serious construction noise impacts are identified in the DEIS. Woodway requests that a quantitative evaluation of mitigation measures be provided in the Final EIS. Commitments to schedule high impact activities, such as pile driving, during specific limited hours should also be included. Commitments to specific hours and days during which noise and vibrations related to

Response to Comment C7-35

The design criteria for seismic hazard mitigation utilizes IBC 2003, which specifies that structures be designed to withstand the maximum considered earthquake ground motions, which in this area, are defined as having a 2 percent chance of exceedence within 50 years and a return period of 25000 years. These design ground motions consider earthquakes from sources with varying magnitudes originating at varying distances from the site. More detailed modeling for slope stability at the Unocal site and to evaluate impacts to the site structures by a worst-case seismic event would be conducted during design phase work once the treatment plant site is selected.

Response to Comment C7-36

The odor control systems are located in close proximity to the process units from which they receive process air. The liquid process units are located to provide gravity flow through the treatment plant and cannot be moved to other terraces. The solids handling building must be located in close proximity to the primary clarifiers. To move the odor control system exhaust stacks to the lower tier would require long traverses of large diameter duct work that would have an elevation drop of nearly 100 feet. This would be expensive and not as effective a design as leaving the exhaust stacks in their current locations, adjacent to the odor control systems. The design for the odor control system requires that there are no offsite odor impacts at any times. The system would prevent odor from impacting residences in the Town of Woodway and moving the exhaust stack location would not be required.

Response to Comment C7-37

Digester cleaning would be performed without offsite odors. Mobile odor prevention units would be attached to the digester to keep a negative pressure on the processes during cleaning. Since digester cleaning typically occurs on a short-term basis, any potential odors could easily be handled by

mobile units. Typically, these units are made up of carbon scrubbers that are sized for high loading and a short useful life before replacement is needed. Brightwater's mobile units would be sized to handle any digester cleaning's odor loading and duration to ensure that no odor breakthrough would occur during these short-term digester cleaning events. The liquids processes would use permanent maintenance air facilities to provide odor prevention during cleaning.

Response to Comment C7-38

The secondary clarifiers at route 9 are now covered at both the Route 9 and Unocal sites and the odor control technology for the Unocal site and Route 9 site are the same for the Final EIS. VOC controls are not being proposed for the liquid processes since total VOC emissions are low, less than 10 tons per year. However, the odor control technology on the liquid processes may provide some VOC control, but no credit was taken for the potential emission reductions provided by the odor control technology. For information on the odor prevention program and the monitoring that will be performed on the odor control system, please refer to the response to the Washington State Department of Transportation, Comment W2-5. Additional information about the wastewater treatment process and the odor control technology selected is provided Appendix 5-A, Odor and Air Quality: Treatment Plant, of the Final EIS.

Response to Comment C7-39

The Town of Woodway's light and glare resolutions No. 41 and No. 49 have been included in the list of referenced regulations included in the Final EIS. It is King County's intent to design to the "Dark Sky" policy. The Final EIS includes this intention. A three-dimensional model has been completed and the methodology and results is in Appendix 13-A, Illumination Modeling of Route 9 and Unocal Treatment Plants, of the Final EIS. It shows the proposed Unocal site and lighting and illumination values at the perimeter of the site. General area (site) illumination is not planned for the project. Only the areas requiring illumination for safety and process operations will be lighted.

Response to Comment C7-40

Inclusion of a noise control plan in the Final EIS is a good idea and this has been taken as far as practical, based on the limited level of the wastewater treatment plant design. A more detailed noise control plan would be developed in the final design phase of the project, which would occur after the EIS phase. Also please refer to the response to Snohomish County Planning and Development Services, Comment S3-132.

Response to Comment C7-41

Flowing water noise impact and mitigation is included in Appendix 10-A, Noise and Vibration: Treatment Plant, of the Final EIS.

Response to Comment C7-42

Residential community standards for vibration perception and impact thresholds were included in the Draft EIS in Section 10.1.4, as Tables 10-6 and 10-7, and are also included in the Final EIS. The Final EIS includes discussion of vibration mitigation for wastewater treatment plant equipment, including isolating mountings and foundation design. Vibration mitigation of large (150 horsepower and larger) pumps, blowers, centrifuges, fans, and engine generators would be designed with the necessary vibration isolation and damping foundations to reduce transmission of force to the supporting structures to levels below the threshold of human perception at the nearest residences. Please, also refer to the response to Comment C7-34 in this letter.

Response to Comment C7-43

Residences near the Unocal site are currently subject to ambient noise levels exceeding 50 dBA only for brief periods as shown in the noise monitoring figures of the Draft EIS technical appendix. Because of the potential for significant construction noise impacts to nearby residences, during these periods of normally low ambient noise levels, the Final EIS includes specific construction noise mitigation to be applied to construction equipment and the site. High noise impact construction activities would only occur between the hours of 7 a.m. to 10 p.m. unless an exemption permit is allowed for construction outside of exempt hours, and if allowed, construction noise levels would be

required to meet the code noise level limits for the permitted construction hours. The Town of Woodway could also place more stringent restrictions on construction noise levels and allowed construction hours within its jurisdiction. Please also refer to the response to the Snohomish County Planning and Development Services, Comment S3-133.

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C7-43 construction and exceeding permissible limits will be allowed, regardless of WAC 173-60-050, should be identified. It is not acceptable to Woodway that residents be subjected to substantial noise impacts at, say, 9 pm, despite the fact that these levels may be allowed by applicable regulations.

Recreation

C7-44 37. On page 14-22, Volume II of the DEIS, under the heading of 'Treatment Plant Sites' within the mitigation measures, the first bullet in Section 14.3.2.1, Olympic Park should be included with the names of other parks to which access will be maintained.

C7-45 38. Woodway's Olympic Park is a greenbelt protection park on a steep bluff, providing habitat and critical areas protection. It is part of a continuous greenbelt along the Woodway bluff, with similar habitat areas to both the north and south of it. The DEIS does not recognize that the character of the park will be permanently altered by construction of the Brightwater plant at the UnoCal site, as that portion of the forested bluff lying within the UnoCal site will be deforested and regraded. King County should consider alternative treatment plant processes that will reduce the size of the plant and minimize impacts to Olympic Park and related continuous habitat areas.

C7-46 39. Woodway would like the Final EIS to state how the access to Olympic Park would be maintained during the construction, even if the temporary barge dock is constructed.

C7-47 40. The potential for future public recreation opportunities on the Brightwater site are not mentioned in the Recreation Mitigation section of the DEIS. There is ample precedent for incorporating such site programmatic uses in the design and function of regional public wastewater and stormwater treatment facilities around the Puget Sound region. Provisions of such public uses are important to mitigate the damage done by inserting large industrial uses into the fabric of residential and commercial neighborhoods. King County should provide public amenities as a part of the development program for the Brightwater plant, wherever it is sited. Woodway requests that King County address the potential for the Unocal site to serve as a public amenity and open space use area in the Final EIS.

C7-48 41. One of the large lots identified as "vacant" on Figure 11-23 is existing Town public open space, referred to as the "reserve". What recreation/open space impacts will be caused to the reserve with the construction of portals in the 1-2 acre siting area of PSA 19? What precautions will King County take to assure that existing wildlife habitat values will not be disturbed and that bird
C7-49 and small mammal habitats will be maintained with no impacts due to portal construction in or near the reserve? How will mature conifer and mixed forest habitats will be preserved so as to maintain and/or actually promote edge and interior wildlife corridors?" How will pedestrian
C7-50 access to and from the site be addressed during construction? The Town would like to ensure that
C7-51 the natural habitat features and values of the "reserve" be protected. How will the natural habitat features and values of the "reserve" be impacted and protected?

Energy and Natural Environment

C7-52 42. If a new 115 kv line is to be installed, what is the proposed corridor alignment? At what stage of the treatment plant construction process would the 115 kv line be installed? Woodway would like to see this new line be installed underground.

Environmental Health

C7-53 43. What is the emergency response plan regarding public notice to surrounding residences in the event of an overflow? How will surrounding properties and agencies be notified?

Response to Comment C7-44

Chapter 14 has been revised to include Olympic View Park as a recreational facility that will retain access if construction activities are near this facility.

Response to Comment C7-45

The Draft and Final EIS acknowledge the steep hillside bluff along the western border of the Unocal site, east of the BNSF railroad tracks, provides natural habitat along the Puget Sound shoreline. Please refer to Chapter 7 for a discussion of this area. Olympic View Park is located entirely within the Town of Woodway. The park does not extend north into the Unocal site. Due to the area required to construct the Brightwater Treatment Plant at the Unocal site, the entire property would be used for the facility; therefore, vegetation along the steep bluff within the site would be removed. Olympic View Park would not sustain direct impacts from construction activities; however, users of the park and wildlife inhabiting the forested bluff would experience short-term indirect impacts associated with construction including noise, dust, odor, and increased vehicle traffic.

There are limited onsite opportunities for mitigating the loss of upland forest areas on the Unocal site. Mitigation for the loss of forested slope above Puget Sound is limited to stream/wetland buffer planting within the Wetland B mitigation area as described in Chapter 7 under Impacts and Mitigation: Unocal System.

Response to Comment C7-46

Access to Olympic View Park would be maintained during construction if the Unocal site were selected for the Brightwater Treatment Plant. Please refer to Chapter 17 for a description of construction equipment access routes and other mitigation measures that would be used during the construction phase of the Brightwater Treatment Plant. The Unocal site discussion outlines specific measures that would be incorporated so local access, although potentially

temporarily delayed, would be maintained. The use of a temporary barge dock during construction is no longer being considered.

Response to Comment C7-47

Similar to the Community-Oriented Building described as a possible mitigation measure at the Route 9 site, as a potential mitigation measure, King County would work with the City of Edmonds to identify potential opportunities for an educational/community oriented building located offsite, depending on community needs. The community building concept is described in Chapter 3 of the Final EIS.

Response to Comment C7-48

The Woodway Reserve is located to the northeast of Portal Siting Area 19 in the Town of Woodway. Therefore, construction of an outfall or portal within the candidate sites in Woodway would not have a direct impact on the Woodway Reserve. However, considering the proximity of the candidate sites within Portal Siting Area 19, the Reserve could be subject to temporary indirect impacts resulting from construction activities. King County will coordinate with the Town of Woodway to reduce or avoid potential impacts to the greatest extent possible.

Response to Comment C7-49

In the Final EIS, 3 to 5 candidate portal sites have been identified within each portal siting area. Impacts to aquatic and forested resources within these specific candidate portal sites are discussed in greater detail in Chapter 7 of the Final EIS.

There are two large parcels in the Town of Woodway at Portal Siting Area 19 that are designated as vacant on Figure 11-23 of the Draft EIS. The northern parcel, owned by a private landowner, is designated as Candidate Portal Site A in the Final EIS. The parcel directly southwest is not being considered as a candidate portal site in the Final EIS and no impacts would occur. If Candidate Portal Site A were selected, the entire site would be needed for construction of the portal. Construction activities would result in temporary impacts to sensitive areas including approximately 0.18 acre of wetland impact, 0.99 acre of stream and wetland buffer impact, and temporary stream diversion. Please refer to Chapter 7 of the Final EIS for more information.

Response to Comment C7-50

As construction activities are not proposed in the immediate area of the Woodway Reserve, pedestrian access to the reserve would not be impacted.

Response to Comment C7-51

Please refer to the response to Comment C7-49 in this letter.

Response to Comment C7-52

Snohomish PUD would supply two independent 115-kV electrical feeders that also originate from the Bonneville Power Authority SNO-KING substation and power two local substations (Richmond Park and Westgate) that would feed the plant. For the Unocal site, approximately 4 miles of 115-kV transmission line would be necessary to bring adequate power and backup power to the site from the two nearest substations, Richmond Park and Westgate substations, each of which is approximately 2 miles from the site. The actual route of the electrical lines would be decided during final design and the decision regarding above versus below ground lines would be determined in accordance with applicable local requirements. More details are included in Chapter 8 of the Final EIS.

Response to Comment C7-53

The King County *Wastewater Treatment Division Overflow Manual* (King County, 2002) establishes emergency response procedures for emergency wastewater overflow events. The Seattle/King County Department of Public Health (Health Department) is notified during all overflow events. If an overflow is known to impact a beach or recreation area creating a potential public health threat, beach postings and/or closures are immediately implemented. The Health Department determines if the posting and/or closure is warranted, and its duration. The Overflow Manual also identifies procedures for contacting media and conducting public outreach. This is consistent with the Regional Wastewater Services Plan (King County Ordinance 13680), which states: “In the event of a raw sewage overflow, the county shall initiate a rapid and coordinated response including notification of public health

agencies, the media, the public, and the affected jurisdiction" (King County, 2002).

Reference:

King County. 2002. *Wastewater Treatment Division Overflow Manual, November 2002, Publication 115.* King County Department of Natural Resources and Parks, Wastewater Treatment Division, WTD Safety Office. Seattle, WA.

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C7-54 44. Please address what mechanism King County will use to ensure that Woodway has a recognized role in the Edmonds design review process for the site and plant design.

ROUTE 9 ALTERNATIVES – PSA 19 AND CONVEYANCE ROUTE

Aesthetics and Views

C7-55 45. It is not possible to determine the visual impacts of the portal stations from this document, even though it is noted that several acres of land will be disturbed during construction of the portal areas. Woodway is especially concerned about the site of Portal 19 for the Route 9 alternative, to be built in the Richmond Beach neighborhood immediately south of Woodway, potentially containing a de-chlorination plant. Supplemental SEPA review needs to be developed for that portal site prior to final site selection to depict the impacts its construction will have on adjacent property owners and the surrounding neighborhood.

Environmental Health

C7-56 46. Will the dechlorination facility associated with one of the identified PSAs for the Route 9 Conveyance corridor result in the production of chlorine gas? If yes, how will this toxic substance be stored on-site and how will it be disposed of? Please address these issues in the Final EIS.

Land and Shoreline Use

C7-57 47. When will specific locations of portals in each PSA be determined? What process will be used to select the portal location? How will King County coordinate the portal location with surrounding jurisdictions, specifically Woodway? Please give specific assurances in the Final EIS that Woodway and other affected municipalities would be included in the final site selection process for the portal sites.

C7-58 48. Since Woodway's zoning districts (covered by PSA 19) do not include conditional use provisions, will King County apply for zoning text amendments to site the portal with a conditional or special use permit within those applicable zone districts?

document2

Response to Comment C7-54

After a final decision is made on the location for the Brightwater System, King County will work directly with affected jurisdictions and permitting agencies on strategies to mitigate impacts of Brightwater construction and operation.

Response to Comment C7-55

Portal Siting Area 19 is a primary portal for both of the Route 9 corridors. Detailed visual analysis has not been completed for the individual portal siting areas or candidate portal sites. This level of detail will be provided during the design phase of the project when a final Brightwater System is selected.

Chapter 12 of the Final EIS includes additional detail on aesthetic impacts and mitigation for the conveyance system. This includes a description of the types of structures that may or may not appear on specific portal sites and sketches demonstrating example mitigation approaches for the types of aesthetic environments found along the conveyance route. During the design and permitting phase of the project, King County will work with the local communities and jurisdictions to develop detailed mitigation and design specific to each selected portal site. Please refer to the response to the City of Shoreline, Comment C6-5.

Response to Comment C7-56

The dechlorination facility would not produce chlorine gas. The dechlorination process would add sodium bisulfite into the water to convert any residual dissolved chlorine in the water into inert chloride.

Response to Comment C7-57

A preferred portal has been selected for Portal Siting Area 19. The preferred portal is located on the Chevron property in Unincorporated Snohomish County. Please refer to Appendices 2-B, Portal Screening Level 1 and 2 Documentation, and 2-C, Portal 19 Screening Level 3

Documentation, of the Final EIS for more information on the selection process and information regarding the portal location.

Response to Comment C7-58

King County will coordinate with affected jurisdictions to procure all necessary land and shoreline permits to site and construct the Brightwater Treatment Plant and associated conveyance and outfall facilities. Where amendments to existing regulations and comprehensive plan policies are required, King County will work with host jurisdictions to enact any needed amendments.

TOWN OF WOODWAY

RESOLUTION NO. 03-260

RESOLUTION OF THE TOWN OF WOODWAY TOWN COUNCIL FORWARDING OFFICIAL COMMENTS ON THE BRIGHTWATER DRAFT ENVIRONMENTAL IMPACT STATEMENT TO KING COUNTY DEPARTMENT OF NATURAL RESOURCES

WHEREAS, the Town of Woodway recognizes the need for essential public facilities such as a regional wastewater treatment facility to serve the projected future growth of King and Snohomish Counties, and

WHEREAS, the Town is fully aware of the geographic significance of its location adjacent to Puget Sound when considering various options for the siting of a wastewater treatment plant and conveyance system that will discharge effluent into Puget Sound, and

WHEREAS, the Town Council appointed the Point Wells/Unocal Advisory Committee comprised of representatives from the Council, Planning Commission and general citizenry to advise the Council on various land use, transportation and facility/utility issues associated with Point Wells and the Unocal property that may impact the Town's, plans, policies and resources, and

WHEREAS, the ten member Point Wells/Unocal Advisory Committee met bi-monthly prior to and throughout the King County wastewater treatment planning process to study the various proposals considered by King County and surrounding jurisdictions for Point Wells and the Unocal sites, and

WHEREAS, the Town proactively participated in the King County wastewater treatment planning process since 1999 including representation on the County's siting advisory committee that was charged with recommending a set of siting criteria to be used by King County in the selection of alternative treatment and conveyance sites, and

WHEREAS, King County applied said siting criteria to a group of potential sites and Executive Sims selected a short list of six potential sites and associated conveyance systems to be considered for the wastewater treatment facility referred to as Brightwater, and

WHEREAS on December 10, 2001, the King County Council found that four of the six sites met the siting criteria and recommended, in concurrence with Executive Sims, that the Unocal and Route 9 sites be evaluated together with their associated conveyance systems, and

WHEREAS, Woodway is directly impacted by the plant and conveyance systems of the Unocal site and the conveyance systems associated with the Route 9 site and participated in public meetings on the two sites, and

WHEREAS, King County has made available grant monies to jurisdictions interested in studying the environmental impacts associated with the treatment plant and conveyance system alternative sites, and

WHEREAS, the Town applied for, and received a grant from King County to evaluate the impacts that the operation and construction of a wastewater treatment plant and/or conveyance system may have on the Town and its citizens, and

WHEREAS, the Town conducted two public meetings in 2002 to identify key community values that may be affected by the operation and construction of an essential public facility within or adjacent to its corporate boundaries, and

WHEREAS, EDAW consultants were hired by the Town to perform as assessment of the potential impacts and suggested mitigation measures that may affect the Town's identified community values and to evaluate the Brightwater Environmental Impact Statement (EIS), and

WHEREAS, the Town submitted the EDAW report entitled, Assessment of the Potential Impacts to Woodway from Development of the Brightwater Wastewater Treatment Plant, July 28, 2002 to King County as part of the scoping process to determine issues to be addressed in the Brightwater EIS, and

WHEREAS, on August 13, 2002 and during the preparation of the Brightwater EIS, King County Executive Sims identified the Route 9 site and the 195th st NE conveyance corridor as the preferred alternatives that would be evaluated in the EIS, and

WHEREAS, the Town Council, the Point Wells/Unocal Advisory Committee and the Town's consultants have reviewed the Draft EIS dated November 6, 2002 and prepared comments for consideration by King County as part of the preparation of the Final EIS.

NOW THEREFORE BE IT RESOLVED BY THE TOWN COUNCIL OF THE TOWN OF WOODWAY:

Section 1. The Town Council hereby submits the attached report entitled Review of the King County Brightwater Draft Environmental Impact Statement November 26, 2002 as the Town's official comments on the Draft EIS.

Section 2. Consistent with the State Environmental Policy Act and EIS process, the Town Council requests that King County respond to the comments and questions contained within the attached report and include County responses within the Brightwater Final EIS.

Passed with an unanimous vote of the Woodway Town Council on January 6, 2003.

Carla A. Nichols, Mayor

ATTEST: Lorraine Taylor, Town Clerk

SEWER AND WATER DISTRICTS

FINAL
ENVIRONMENTAL
IMPACT STATEMENT

Brightwater
Regional Wastewater
Treatment System

COMMENTS AND RESPONSES

D3
CROSS VALLEY WATER DISTRICT

FINAL
ENVIRONMENTAL
IMPACT STATEMENT

Brightwater
Regional Wastewater
Treatment System

COMMENTS AND RESPONSES

January 21, 2003

King County Department of
Natural Resources and Parks
Wastewater Treatment Division
201 South Jackson Street
Seattle, WA 98104-3855

Ladies and Gentlemen:

Cross Valley Water District of Snohomish County (the "District") hereby submits the following comments on the Brightwater Regional Wastewater Treatment System Draft Environmental Impact Statement ("DEIS") issued November, 2002 pursuant to the State Environmental Policy Act.

D3-1 The District's primary concern about the Route 9 site is the protection of the Cross Valley Aquifer, a federally designated sole source aquifer. Other concerns include (a) the protection of other surface water and groundwater features that are an integral part of water-resources management; (b) relocation of District water and sewer facilities impacted by the construction of D3-2 the Treatment System; (c) the impact on the District's water system caused by the amount of water to be purchased from the District by King County to serve the Treatment Plant; (d) the increased operation and maintenance costs for the District's sewer system caused by the substantial reduction in the number of potential sewer customers and the resulting reduction in sewer flows, and (e) the D3-3 financial impact to the District caused by the loss of sewer connection charges and sewer service revenues resulting from the substantial reduction in the number of potential sewer customers for the District.

D3-4 In general, the District finds that the DEIS inadequately addresses the District's concerns. Throughout the DEIS there are conclusions made about the impact of the project on the environment without the support of technical analysis. Where the DEIS does identify impacts, they are then summarily dismissed without an adequate analysis of possible mechanisms that will either mitigate the impacts or compensate injured parties.

The District retained Robinson & Noble to analyze the DEIS's discussion of impacts to the Cross Valley Aquifer and to other surface water and groundwater features which affect water resources management. Robinson & Noble prepared a report to the District dated January, 2003 which is attached hereto and incorporated herein as an integral part of the District's comments.

The District also retained PACE, Inc. to analyze the DEIS's discussion of impacts to the District's sewer and water systems. PACE prepared a report to the District dated January 15, 2003, which is attached hereto and incorporated herein as an integral part of the District's comments.

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Response to Comment D3-1

King County is dedicated to protection of the Cross Valley Sole Source Aquifer and other surface and groundwater features. King County conducted additional studies on the effects of the project to wells and aquifers. The expected effects to the Cross Valley Aquifer during both the construction and operational phases of the Brightwater Treatment Plant are summarized in Appendix 6-B, Geology and Groundwater, of the Final EIS. As shown by these analyses, effects to the Cross Valley Sole Source Aquifer are anticipated to be negligible. Chapter 6 of the Final EIS discusses the evaluations made of the other groundwater and surface water features and where mitigation measures have been proposed for all types of impacts anticipated.

Response to Comment D3-2

As indicated in Chapter 17 of the Final EIS, during the project design phase, affected utility purveyors would be contacted and utility location information would be requested to avoid utility conflicts where possible. If it is necessary to relocate an existing utility, the utility purveyor would be consulted on relocation options.

For the Route 9 site, any onsite water or sewer utilities that serve existing land use would be abandoned or removed. Planned service disruptions would be made in accordance with Cross Valley Water District's requirements. This would include advance notification to users and a requirement to minimize service disruptions.

King County would purchase its water for the Brightwater Treatment Plant from the Cross Valley Water District. King County has contacted the District regarding the flow capacity it currently provides at the Route 9 site, which is approximately 40 gallons per minute (gpm). Should the Route 9 site be selected for the Brightwater Treatment Plant, additional discussions will be held with Cross Valley Water District to determine what system improvements would be

required to provide the necessary water service and fire flows to the site. In addition, King County will be working with other local permitting agencies to identify opportunities to reduce water demand including using some or all of the reuse water (up to 3,500 gpm) as a source of water for fire protection. Five million gallons per day (gpd) of reclaimed water capacity, which equates to about 3,500 gpm, will be provided at the treatment plant site when it comes online in 2010. Space will be reserved onsite for expansion to provide up to 54 mgd of reuse water in the long term as demand increases and other potential receivers of the effluent reuse water are identified. The reclaimed water will be used at the treatment plant site for irrigation, tank cleaning, and other processes that do not require potable water. Appendix 3-D, Reclaimed Water Technology Review and Evaluation of Potential Water Reuse Opportunities, of the Final EIS describes the water reuse program and possible demand for reclaimed water in detail.

Response to Comment D3-3

For updated information on impacts to the Cross Valley Water District, please refer to Chapter 17 of the Final EIS. Cost and economic impacts are not topics analyzed under SEPA and therefore are not addressed in the Brightwater EIS. “SEPA contemplates that the general welfare, social, economic and other requirements and essential considerations of state policy will be taken into account in weighing and balancing alternatives and in making final decisions. The EIS is not required to evaluate and document all of the possible effects and considerations of a decision or to contain the balancing judgments that must ultimately be made by the decision makers” (WAC 197-11-448(1)).

However, once a final decision is made on the location for the Brightwater System, King County will work directly with affected jurisdictions and permitting agencies on mitigation strategies and solutions to Brightwater construction and operational impacts. As part of the overall decision process, King County is revising the cost estimates (dated November 2002) for the Brightwater alternatives. The revised estimates will be updated at the end of 2003 and will be available on request by contacting the Brightwater project at brightwater@metrokc.gov, or 206-684-6799, or toll-free 1-888-707-8571.

Response to Comment D3-4

Both the Draft EIS and the Final EIS include a discussion of the probable significant adverse environmental impacts and the reasonable mitigation measures for these identified impacts beyond that characterized in this comment. Additional analysis that has been conducted and that relates to probable significant adverse environmental impacts that will not be mitigated, or regulated to a level of insignificance, is included as part of the Final EIS.

1. Impact on the Cross Valley Sole Source Aquifer.

D3-5 The most significant impact which is not adequately addressed in the DEIS is the impact of the substantial dewatering which is proposed for the Route 9 site. Although no specific range of dewatering pumping rates is given, the upper end of the estimates given is almost 5,000 gallons per minute and for a period of up to six years. In addition, dewatering is proposed not only during construction of the Treatment System, but also over the long term to stabilize necessary infrastructure. Another potential source of dewatering lies along the conveyance route. If the portals and tunnels are not adequately sealed, then the ground along the outside of the pipe will become a conduit for water to flow from the aquifer to Puget Sound. The impact of all these sources of dewatering may be to diminish the productivity of the District's wells. Specific analysis of these impacts is necessary in the EIS before the District can determine the extent of risk to its wells, and the ability of King County to mitigate or compensate for these impacts. Finally it is important to discuss the implementation of appropriate monitoring to determine if the water levels in the District's wells is lowered as a result of the construction and operation of the Treatment System.

2. Impact on Surface Waters.

D3-6 There are also potentially significant impacts to surface water quality and quantity such as Little Bear Creek. If dewatering is conducted next to streams, such as Little Bear Creek, the water level in the streams may be permanently impacted. The District may then be harmed by limitations on water resources that may occur, and the District may be required to maintain base flows in the area's streams.

3. Impact on the District's Water and Sewer Facilities.

D3-7 The District owns water and sewer mains and appurtenances through and near the Route 9 site which will have to be abandoned and new facilities constructed. King County will be responsible for paying the cost of constructing the new facilities.

4. Impact on the District's Water Supply System.

D3-8 The DEIS states at page 17-18 that water demand from the treatment plant will be approximately 350 gallons per minute. The District has not received a request from King County to provide this flow, and until it does it is unable to determine if it can provide this flow without the construction of additional improvements to its water system.

5. Impact on the District's Sewer System.

D3-9 The District jointly owns with Alderwood Water and Wastewater District a 30 inch sanitary sewer trunk line which runs from the King/Snohomish County line, where it connects to the King County sewer system, north to 233rd Place where it turns into a 15 inch main and continues to the

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Response to Comment D3-5

Substantial documentation concerning water resources, potential effects to these resources from the construction and operation of the Brightwater System, and mitigation responses is contained in Appendix 6-B, Geology and Groundwater, of the Final EIS for the treatment plant locations and the conveyance corridors. Other commentors on the Draft EIS raised similar concerns, and in response, summaries have been drafted that specifically addresses the groundwater and contamination issues, which are described in detail in Appendix 6-B. Please refer to the response to the Washington State Department of Ecology, Comments W5-9, W5-15, and W5-43, for the summaries concerning conveyance corridors, treatment plant locations, and treatment plant contamination, respectively.

Response to Comment D3-6

As disclosed in Chapter 6 of the Final EIS, construction dewatering flows for the Route 9 site are anticipated to average approximately 350 gallons per minute (gpm) with a peak flow of approximately 550 gpm. Long-term underdrain dewatering during operation of the Route 9 site would be approximately 350 gpm. Since groundwater from surficial groundwater units on the site discharge to Little Bear Creek, this dewatering under the most conservative worst-case conditions could reduce base flow in the stream by a comparable amount of up to 550 gpm during construction (with an average of 350 gpm), and 350 gpm during operation. However, King County proposes to discharge this dewatering flow back to the stream, either through direct discharge, through re-introduction to local groundwater, or through the use of swales on the site, which would minimize flow impacts to Little Bear Creek from dewatering. Please refer to Appendices 6-B, Geology and Groundwater, and 6-D, Permanent Stormwater Management at the Treatment Plant Sites, of the Final EIS for additional detail.

Response to Comment D3-7

If the Route 9 site is selected, and the construction of that alternative is determined to impact facilities owned by the Cross Valley Water & Sewer District, then the District will have additional opportunity to comment on and discuss reasonable mitigation measures with King County during the permitting processes.

Response to Comment D3-8

Please refer to the response to Comment D3-2 in this letter.

Response to Comment D3-9

Please refer to response to City of Shoreline, Comment C6-5, regarding mitigation suggestions.

Route 9 Brightwater site. The sewer lines branch out from this location to provide sewer service to the District's customers. With the construction of the Treatment Facility at the Route 9 site, and the treatment of the District's and Alderwood's sewerage at the Route 9 site, this trunk line will be greatly under utilized. This will cause a significant increase in operation and maintenance costs for the districts. The District should be reimbursed for these additional operation and maintenance cost, or alternatively, King County should purchase the 30 inch and 15 inch trunk located in Snohomish County. In addition, King County is purchasing the 30 inch trunk located in King County from the districts in installments based on the amount of increase in the flows, annually. Since construction of the Treatment Facility at the Route 9 site would reduce the amount of flows, King County should purchase the entire remaining interest in the 30 inch main in King County, now. D3-9

6. Loss of Sewer Connection Charges and Sewer Service Revenues.

The location of the Route 9 site is in the center of the District's designated sewer service area which includes properties with industrial zoning. When the District designed and constructed the sewer system, it anticipated development of these industrially zoned properties and their connection to the District's sewer system. The loss of these properties will have a significant impact on the District's revenues from the loss of connection charges and the loss of annual sewer service charges. The District should be compensated for these losses. D3-10

The DEIS greatest failure is that it does not adequately identify the potential impacts to the District. Most importantly, it does not acknowledge the significant risk to the Cross Valley Sole Source Aquifer and surface waters from dewatering both during construction and thereafter. As a result, the DEIS does not adequately discuss the mitigation of these impacts and the District requests that a supplemental DEIS be prepared. D3-11

Dale Deierling, President
Cross Valley Water District

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Response to Comment D3-10

Please refer to the response to Comment D3-3 in this letter regarding cost and economic impacts.

Response to Comment D3-11

Please refer to the responses to the Washington State Department of Ecology, Comments W5-9, W5-15 and W5-40. Additional detail is provided in Appendix 6-B, Geology and Groundwater, of the Final EIS.

January 15, 2003

Mr. Gary Hajek, Manager
Cross Valley Water District
8802 - 180th Street SE
Snohomish, WA 98029

Subject: **King County Brightwater Project**
DEIS Review

Dear Gary:

We have reviewed Chapter 17, Public Services and Utilities, of the DEIS for the King County Brightwater project. The chapter covers all utilities impacted by the project as well as other public services such as traffic, emergency medical services, law enforcement, schools, etc., for both the Unocal and Route 9 sites. We have concentrated our review only on the Route 9 site and its potential impacts to the District's water and sewer facilities. Our comments are provided in relation to specific sections in the text of the document which are also repeated herein for easy reference.

Section 17.1.2 Treatment Plant Sites, pg. 17-1, first paragraph
"The exception is the Cross Valley Water District's water and sewer lines that cross east-west through the Route 9 site, just north of the Stock Pot Soup facility."

D3-12 In fact, the District has water and sewer facilities that run north - south along the entire western portion of the site and that are interspersed throughout the northern half of the site to serve existing uses. It is assumed that the internal systems would be abandoned/removed as existing customers are relocated to make way for construction of the sewer plant. However, some of the facilities are general facilities that are critical to the operation of the District's water and sewer systems as a whole, and as such must remain in service or be replaced by alternate facilities.

D3-13 **Section 17.1.2 Route 9 Site, pg. 17-6, Wastewater, first paragraph**
"The Cross Valley Water District also provides wastewater collection service to an estimated 8,900 customers including the Route 9 site and within the UGB. Properties to the north of Stock Pot Soup have individual septic systems. However, the Cross Valley Water District has plans to extend sewer service into the Northshore School District property within the Route 9 site."

The proper number of existing sewer connections in the District should be 72. It should be noted

Response to Comment D3-12

Chapter 17 of the Final EIS has been updated to include the referenced Cross Valley District's water and sewer lines that run north to south along the western portion of the Route 9 site. Also, please refer to the response to Comment D3-2 in this letter.

Response to Comment D3-13

The Northshore School District has no intent to develop the site. On April 21, 2003, the District withdrew its docketing request for a rezone and comprehensive plan amendment, indicating that their property had been sold to King County.

that the "District" does not have plans to extend sewer service into the Northshore School District property but rather was requested by the School District, through a developer extension agreement,

D3-13 to provide service to the proposed development on the site. The District was working with the School District to accomplish that.

Section 17.2.2.1 Construction Impacts, pg. 17-18, Route 9 Site, first paragraph
"The Cross Valley Water District currently has water and sewer lines that run along the Route 9 easement and cross the site at the UGB. Impacts to these lines are not anticipated."

D3-14 It is highly unlikely that a sewage treatment plant can be constructed on this site without impacting the lines discussed. If they are to be impacted, alternate facilities must be constructed and in service prior to disruption of service to the existing lines.

Section 17.2.2.2 Operational Impacts, pg. 17-18, third paragraph
"The water demand of the treatment plant will be approximately 350 gallons per minute (gpm) for continuous use (potable water, wash out, laboratory use, etc.). The average fire flow for a 1-hour period would be approximately 2,000-2,500 gpm of water. A portion of these flows can be provided from reclaimed water produced at the site. No significant impacts to water, stormwater, or communications are anticipated, as the service providers have the capacity to provide these flows"

D3-15 It has not yet been determined whether Cross Valley Water District can provide a continuous flow of 350 gpm to this site via their existing system, without constructing additional connections to the Clearview Local Facilities, while providing the current level of service to the remainder of the District. An analysis will have to be made to determine whether improvements are necessary to do this.

Sewer Trunk Main

Cross Valley Water District jointly owns, with Alderwood Water and Wastewater District, a 30-inch sanitary sewer trunk line. This line runs along the eastern boundary of SR 522 from the King/Snohomish County line, where it connects to the King County regional collection facilities, northerly to a crossing of SR522 at 63rd Avenue SE, then north in 63rd Avenue SE to 233rd Place SE, then east in 233rd Place SE to SR 9 and then turns into a 15-inch pipe across SR 9 to the Route 9 Brightwater site where the main branches north and south to provide service to District customers.

D3-16 This facility was constructed by Cross Valley Water District in 1998.

Construction of the Brightwater treatment plant on the Route 9 site will turn this main from a regional trunk to a local collector facility, with a necessary capacity equivalent of an 8-inch pipe, since most of the District's sewage will no longer flow to the south but will be collected and treated at the new Brightwater site. It is also assumed that much of the flow from Alderwood Water and Wastewater District can also be rerouted to the new Route 9 site. The flows in the 30-inch trunk line will therefore be greatly reduced and most likely result in maintenance problems for the facility.

D3-17 Since construction of the Brightwater treatment plant will render this facility mostly unnecessary,

Response to Comment D3-14

Please refer to the response to Comment D3-2 in this letter.

Response to Comment D3-15

Please refer to the response to Comment D3-2 in this letter.

Response to Comment D3-16

Cross Valley wastewater collection service currently discharges into King County's collection system to be treated by either the South Treatment Plant or West Point. The Brightwater treatment plant will not affect the Cross Valley wastewater; they will continue collect from Cross Valley and their collection system would be treated by the Brightwater plant, regardless of site chosen.

Response to Comment D3-17

SEPA requires a discussion of measures to mitigate significant adverse environmental impacts identified in the EIS. In the Final EIS, King County has identified proposed and potential mitigation measures. Once a final decision is made on the location for the Brightwater System, King County will work directly with affected jurisdictions and permitting agencies on mitigation strategies and solutions for Brightwater construction and operational significant adverse environmental impacts.

Ordinance 13680, adopting the Regional Wastewater Services Plan, establishes environmental mitigation policies to guide King County in working with communities to develop mitigation measures for environmental impacts from the construction and operation of wastewater facilities. This ordinance is available on King County's Web site at: http://dnr.metrokc.gov/WTD/rwsp/documents/13680.pdf.

D3-17 except to serve those customers directly adjacent to it, it is the opinion of the District that they should be reimbursed by King County for the construction costs of the 30-inch main. It would also be preferential for the County to take over ownership and operation and maintenance of the facility since a good portion of it lies outside the District's boundary. An alternate to direct ownership would be for King County to cover additional O&M costs associated with the reduction in flow in the large main.

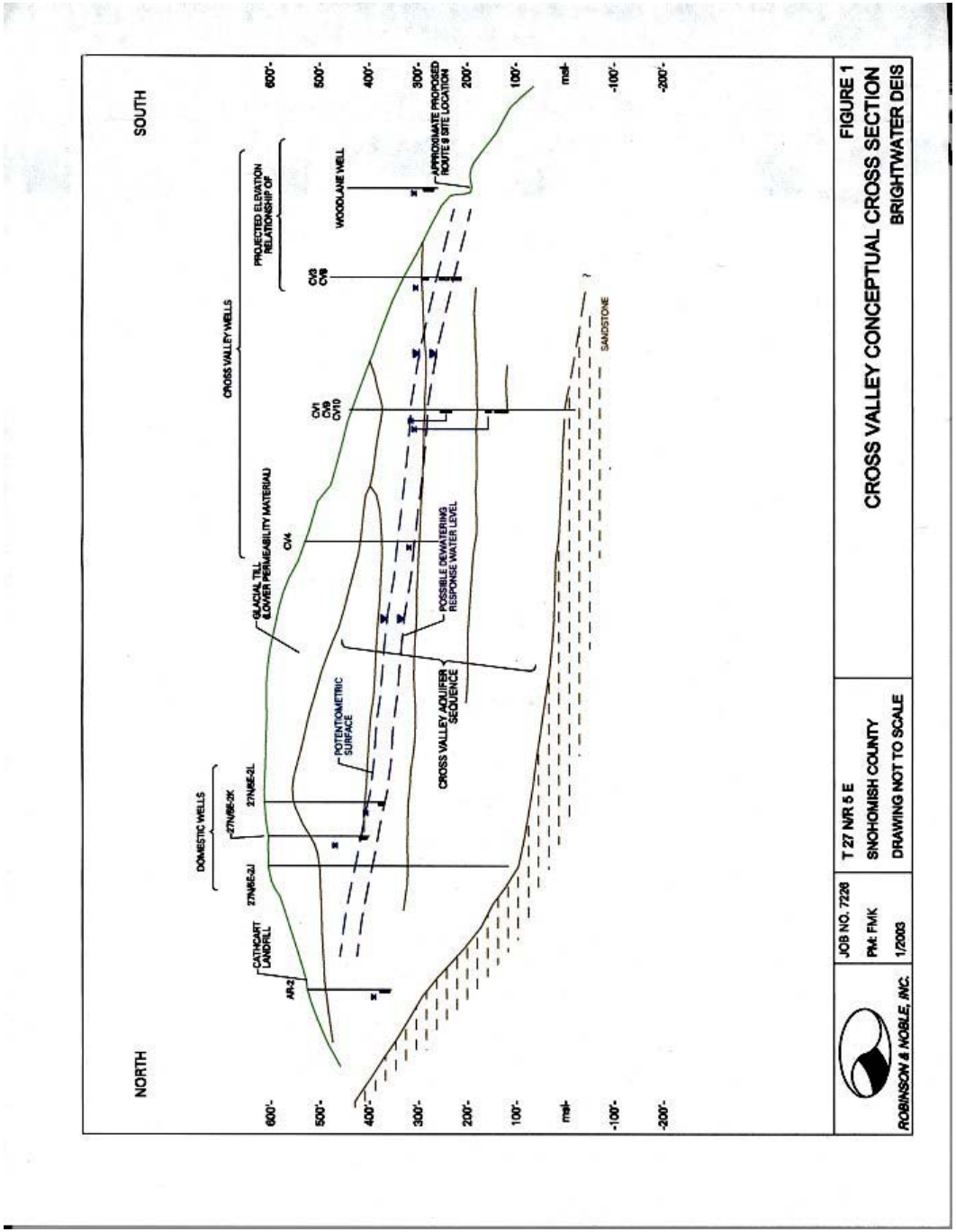
Let me know if you have any questions.

Sincerely,

PENHALLEGON ASSOCIATES
CONSULTING ENGINEERS, INC.

Dave Hutley, P.E.
Vice President

cc: Pam Murray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GLACIAL TILL &LOWER PERMEABILITY MATERIAL)
CROSS VALLEY WELLS
CV4
CV1
CV9
CV10
CV3
CV8
PROJECTED ELEVATION RELATIONSHIP OF
WOODLANE WELL
CROSS VALLEY AQUIFER SEQUENCE
POSSIBLE DEWATERING RESPONSE WATER LEVEL
APPROXIMATE PROPOSED ROUTE & SITE LOCATION
SANDSTONE
ROBINSON & NOBLE, INC.
JOB NO. 7228
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SNOHOMISH COUNTY
DRAWING NOT TO SCALE
FIGURE 1
CROSS VALLEY CONCEPTUAL CROSS SECTION
BRIGHTWATER DEIS

REVIEW OF WATER RESOURCE RELATED ASPECTS OF THE KING COUNTY BRIGHTWATER PROJECT DEIS
For
CROSS VALLEY WATER DISTRICT

RECEIVED
JAN 21 2003
ENVIRONMENTAL PLANNING DIVISION

Robinson & Noble
January 2003

INTRODUCTION

Robinson & Noble has provided hydrogeologic expertise to the Cross Valley Water District and its predecessor, the Cross Valley Water Association, for more than three decades. As its groundwater resource expert, we were asked to provide a water-resource focused, technical review of the DEIS issued by King County for the proposed Brightwater Treatment Plant Project. The District's primary interests lie in the protection of the Cross Valley Aquifer, a sole-source aquifer registered with the EPA, and the protection of other surface water and groundwater features that are an integral part of the water-resource management in which the District plays a significant role.

Our initial effort included review of pertinent reports for the area, including early work by this firm and subsequent EPA work related to designation of the Cross Valley Aquifer as a federally protected, sole-source aquifer. The review of previous hydrogeologic investigations was required to assure our subsequent DEIS review was accomplished in the context of documented interpretation of District groundwater/surface water resources. Following the review of previous work, we scanned the entire DEIS document and its appendices to determine areas of water resource implications in EIS discussions. Chapters or sections containing water resource implications were subjected to a more focused review. When issues pertinent to the District's water resource interests were identified, specific references, comments, and recommendations were noted. A general discussion critiquing that component was developed after accomplishing the focused review of each individual DEIS component. Once review of the entire document was accomplished, additional general comments regarding the overall DEIS were written.

The general findings of our review are presented first to allow reference to them in the more specific responses and give the reader a sense of the entire document, within which specific comments will have more meaning. The general comments are followed by comments addressing each chapter, appendix, or technical support appendix. Naturally, chapters dealing with issues not related to water resources received significantly less attention. The reviews of individual DEIS sections are separated into general discussions of content and specific comments associated with explicit, referenced language in the section. This presentation should facilitate the reader's ability to understand DEIS issues, even if they do not choose to wade through several pages of specific page/line citations and comments. We recognize this makes our report of findings longer but are convinced it will be more functional to the District in this format.

D3-18 The possibility exists that some who read our comments may infer we stand in opposition to the Brightwater Project. This is an incorrect assessment of our position and our role in this matter. The SEPA process is designed to be a protection of the proponent as much as it is a protection

Response to Comment D3-18

Thank you for your comment.

January 22, 2003

from the opponent. Without an honest dialogue regarding concerns and potential liabilities hopefully provided by the SEPA process, a project could move forward along a path leading to insurmountable obstacles or liabilities. The task of the document reviewers within the SEPA process is to assure concerns potentially impacting their interests are appropriately evaluated and addressed before causing expensive delays or project cancellation. It is in Cross Valley Water District's best interest to assist the County in designing the most appropriate project in a manner protecting its own vital interests. Within that responsibility, Robinson & Noble's role is to identify areas where the proposed project threatens the District's water-resource interests. Additionally, our role is to point out where the DEIS does not provide appropriate information or sufficient information to allow the District to determine if its interests are protected or not. Our efforts, and we believe those of the District , are to assure the best possible project comes out of the SEPA process. We hope the comments presented here are accepted in the spirit in which they are offered. D3-18

GENERAL COMMENTS REGARDING THE DEIS

D3-19 Though a great deal of technical information is provided in the DEIS, several parts of the document tend to read as if they were initially written as a feasibility report with the environmental impact aspects inserted into it as an afterthought. This tendency is particularly apparent in the chapters dealing with groundwater resources, surface water resources, and dewatering (Chapters 3, 4, 6, 7, and 9 and several appendices). The impression is given that no specific analysis of water resource impacts was accomplished, but rather, opinions or impressions of the potential for impact were merely added to an existing document without technical analysis regarding the nature or magnitude of those impacts. Some sections, such as the chapter dealing with air quality impacts, present substantial discussion of methods used and the nature of predicted impacts. However, many chapters and appendices tend to merely add language at the end of a paragraph (otherwise not related to impact) providing a generic description of an environmental component. The level of discussion is often more that of an environmental checklist rather than an impact analysis. Another aspect is that often after a detailed discussion describing the setting and an equally long discussion regarding the implications of a given environmental component to project execution, only a vague sentence or two recognize the potential for the project to impact that environmental component. In many instances, no effort is made to relate the described setting to the potential environmental impacts to that setting .

D3-20 Another document shortcoming is the lack of detailed discussion regarding the mechanisms causing identified impacts. Often an impact is acknowledged, but with only a single sentence and no detail of how the impact occurs or to what degree or magnitude it is expected to reflect in the environment. Impacts to water resources as they relate to the dynamics of the hydrologic system must be considered. Understanding how the project impacts water resources is essential to any discussion of the impact's significance and evaluation of proposed mitigation. The analyses leading to the conclusion that an impact will or will not occur are as important as the conclusion itself. This level of explanation is not present in the groundwater resource discussions and is only minimally provided in the surface water discussions. Dewatering, an aspect of the project that will definitely impact groundwater resources, is presented only in the most nebulous of terms as

Robinson & Noble, Inc.
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Response to Comment D3-19

Please refer to the response to the Olympic View Water & Sewer District, Comment D2-8.

Response to Comment D3-20

Please refer to the response to the Olympic View Water & Sewer District, Comment D2-4.

January 22, 2003

D3-20 something that will occur. No analysis of the implications at either a well hydraulics or an aquifer budget level is provided.

D3-21 The DEIS also has a propensity to rely on either a simple statement that BMPs will be employed or that all pertinent regulations will be met rather than provide a discussion of potential mitigation. We understand it is sometimes necessary in the early stages of project planning to rely on the fact that undetermined techonologies will be employed to mitigate a given impact. In such situations a statement that BMPs and regulations will provide protection or mitigation may be the best that can be offered. This document, however, is intended to be the only formal opportunity for potentially impacted entities to determine whether their interests are protected or not. Without at least a speculative description of the technologies providing protection, mitigation, or compensation, it is unrealistic to expect those entities to accept that their interests will be protected. In our opinion, the tactic of dismissing an identified impact by the assertion that BMPs will be used, or that all pertinent regulations will be adhered to, is overused in this DEIS, particularly in matters dealing with water resources.

D3-22 In many chapters, the tendency is to acknowledge and then summarily dismiss impacts or merely imply they will be dealt with, giving no indication of how or when that will occur. We suggest more detailed discussion be made regarding how the project's potential impacts were determined, following identification of significant impact potential by discussion of possible mechanisms that would either mitigate impacts or compensate harmed parties. Such clarification is imperative for a reviewer to understand the discussed impacts in some instances. Without this type of clarity, it is impossible for entities such as Cross Valley Water District to know whether a realistic awareness of environmental impacts exists or whether a stated intent to mitigate is sincere and likely to be effective.

General Water Resource Issues

D3-23 The District has made its need for protection of the Cross Valley Aquifer known through its successful petition that the aquifer be recognized by the Federal government as a Sole Source Aquifer under EPA regulations. It is somewhat telling that the discussion of the sole source aquifer issue is essentially isolated in the DEIS to a statement that such a designation does not matter to the Brightwater project, since no Federal money is expected to be associated with project funding. The impression that the proponents consider the sole-source classification merely as a regulatory hurdle not a formal recognition of the importance of the aquifer gives insight into the approach used in assessing the project's potential to impact water resources. The entire document discusses water issues in terms of how they might affect the project rather than how the project will affect the resources. This viewpoint hinders the document's effort to identify and propose mitigation for water resource impacts.

Water Quantity

D3-24 The largest mechanism through which the water resource interests of Cross Valley Water District might be threatened is proposed dewatering for the Route 9 site. Yet, the DEIS discusses dewatering in a relatively cursory manner, focusing on how groundwater impacts project construction and operation. Very little consideration is given to how the required dewatering will

Robinson & Noble, Inc.
Page 3

Response to Comment D3-21

The Final EIS provides additional details as to what is meant in any given area by the use of the term "best management practices." Additional analysis has been developed since issuance of the Draft EIS with regard to significant adverse environmental impacts and reasonable mitigation measures. Also, members of the public and other agencies used the SEPA process to provide specific suggestions for mitigation measures. Based on this input and as is authorized under SEPA, the Final EIS provides additional information concerning mitigation of identified significant adverse environmental impacts.

Response to Comment D3-22

Both the Draft EIS and the Final EIS include a discussion of the probable significant adverse environmental impacts and the reasonable mitigation measures for these identified impacts beyond that characterized in this comment. As with any large project of this scale, more detailed analysis is being conducted on all aspects of the project. Additional evaluation of impacts and consideration of mitigation measures have been conducted in response to Draft EIS comments. As appropriate, much of this additional analysis is set forth in the text and appendices of the Final EIS.

Response to Comment D3-23

King County also acknowledges the importance of the Cross Valley Sole Source Aquifer and has conducted and summarized detailed evaluations of potential impacts and mitigation to this water resource in Appendix 6-B, Geology and Groundwater, of the Final EIS. As stated in this appendix, impacts to the Cross Valley Water District's water supply system are expected to be negligible during both construction and operation of the Brightwater System.

Response to Comment D3-24

Please refer to the response to Comment D3-5 of this letter.

January 22, 2003

D3-24 impact aquifers and surface water bodies. We found a few one-sentence discussions acknowledging that major dewatering will likely impact base flows of streams. Likewise, a few places acknowledge that dewatering will "lower water levels in wells" (Table 4-4, multiple entries). We have not identified any specific analyses in the DEIS addressing the possibility of major direct threats to Cross Valley Water District wells.

D3-25 Yet, the potential for major dewatering at the Route 9 treatment plant site carries implications to the aquifer that might ultimately affect aquifer production. Very large dewatering pumping rates are discussed at several points in the document. Though no specific range of dewatering pumping rates is given for the Route 9 site, the upper end of the estimates provided elsewhere in the document approaches 5,000 gallons per minute. Discussions also identify a dewatering period as long as six years. Reference is also made to a particular site possibly requiring perpetual dewatering to stabilize some necessary infrastructure.

We know of examples in the Puget Sound region where even moderate amounts of such dewatering have significantly lowered water levels in production wells nearly a mile away. When the Trident base at Bangor (in Kitsap County) required dewatering, a major effort was undertaken to monitor water levels in the region, recharge water directly back into the impacted aquifer, and compensate impacted parties. If the upper estimates or even the mid-range estimates of dewatering for the Brightwater project are required, the necessary dewatering could be equivalent to that done at Bangor. Yet, and in spite of the fact that dewatering and lowered water levels are acknowledged in the DEIS, no discussion of the impacts or the major efforts required to define, mitigate, and compensate damaged parties is given. The limited nature of the Cross Valley aquifer has been well documented (Noble, 1972; Noble, 1983; EPA, 1987). This aquifer has a real possibility of being impacted by long-term dewatering at the Route 9 site. Such a response could diminish the productivity of several District wells. The DEIS does not provide any analysis addressing this possibility, even though the amount of water being discussed in the dewatering sections could represent a significant percent of water flowing through the Cross Valley Aquifer. Specific analysis of these impacts will be necessary before the District can determine the amount of risk to its wells or the ability of the proponent to mitigate or compensate for impacts.

D3-26 The nature of water-resource management in the State of Washington inextricably links surface water and ground water. Though Cross Valley Water District does not currently use surface water, responsibility for the maintenance of stream base flow (such as Little Bear Creek) could easily become a requirement in future regional water-resource management. Cooperative efforts of local and regional political entities have become the preferred method of addressing watershed protection and management. If dewatering harms area streams, the District will likely become one of the participating entities addressing such problems. Dewatering may potentially impact the water quantity or quality of surface water resources in the area. If surface waters are compromised, the Cross Valley Water District could be hampered by resulting water-resource constraints. This gives the District an interest in and a responsibility to see that the health of all the regional water resources are properly addressed in the Brightwater planning process and that all the resources are protected during plan execution. The DEIS discusses only the District's wells, then it erroneously dismisses them as outside the area of potential impact.

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Response to Comment D3-25

As noted in prior responses to this letter's comments, substantial additional data gathering and groundwater impact analyses have been conducted since the Draft EIS. Please refer to the response to the Washington State Department of Ecology, Comment W5-9, for a summary of the data gathering and analyses relative to the Route 9 site.

Response to Comment D3-26

King County shares your concern for surface water in the vicinity of the Route 9 site and has conducted detailed analyses evaluating potential impacts and reasonable mitigation. Please refer to the response to the Washington State Department of Ecology, Comment W5-9, and Chapter 6 of the Final EIS.

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Water Quality Issues

D3-27 Aspects of potential contamination to regional surface water are not appropriately recognized in the DEIS. Typically treatment plants require emergency by-passes for times of prolonged power outages. Influent and effluent lines may occasionally undergo line breaks. If this project has a plan eliminating any such emergencies from occurring, that plan should be described. If any potential events exist in which substantial amounts of untreated sewage could gain access to the surface water, those events certainly deserve recognition as potential environmental impacts. These issues do not appear to be dealt with in anything more than a cursory manner anywhere in the document.

SPECIFIC COMMENTS (BY CHAPTER/APPENDIX)

D3-28 It is difficult to reflect omissions in the context of specific citations and comments. In some cases we are sure that assertions made within the general comments will not be reflected in individual comments to the degree they deserve. This should not be construed as an indication that those issues are unsubstantiated nor that they are unimportant.

Chapter 1
Section 1.8.2 Conveyance System Impacts, p. 1-10, first paragraph
"The Unocal System also has a much longer influent conveyance tunnel than Route 9, which would result in a longer flow of untreated wastewater. Once in operation, the conveyance facilities for either Route 9 or Unocal would not cause any significant adverse impacts."

D3-29 This says it is but it isn't?? Is there a concern or not. Presumably, the probability of rupture is related to the length of the conveyance. The fact that one is longer, therefore, requires a difference in the probability of rupture. This is implied in the quoted statement. The issue is then summarily dismissed in the following statement. This is noted because it is an early example of a recurring tactic of the DEIS. Potential impacts are recognized or implied only to be summarily and often immediately dismissed.

D3-30 **Chapter 2**
This chapter presents a fine history of how the Brightwater project evolved and why it is needed. There is nothing in the chapter that relates to water resources or the potential to impact them.

Chapter 3 Description and Comparison of Alternatives
A detailed hydrogeologic comparison of the force-main and the gravity sewer options reveals issues that have been left unaddressed in this chapter. The consequences of building a conveyance tunnel through aquifer material is not addressed nor is the difference between
D3-31 construction within aquifer or aquitard materials. The nature of and lateral consistency of the sediments the utilities will tunnel through, likewise, is not discussed. Evidence from the subsurface work performed in the area in the past indicates the geologic and hydrogeologic conditions are probably irregular in their vertical and horizontal distribution. If the force main options are pursued, the impacts to the aquifer are likely to be worse and the consequences of a breech more serious. If a gravity sewer system is implemented, there is still no assurance that
D3-32 the tunnel would remain in aquitard material throughout its run. The authors should consider

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Response to Comment D3-27

The Final EIS contains substantial new information regarding the frequency and location of overflows, and on the potential for pipeline breaks and spills. Chapters 6 and 7 of the Final EIS, include evaluations of the impacts of emergency overflows to water quality and fish and wildlife. Additional information on the location, frequency, and duration of overflows is provided in Appendix 3-E, Flow Management and Safety Relief Point.

The potential for a pipeline break in the Brightwater System is very low. Current pipeline standards promulgated by Ecology (Ecology Publication 1998; WAC 173-240) result in an extremely low risk of pipeline failure. Tunnel lining will be designed to meet the goal of no long-term adverse impacts to groundwater quality. To meet this goal, seals or gaskets in piping will be included in the project design, and piping will be connected with flexible joints to allow for deferential movement during seismic events and other ground disturbance. Please refer to Appendix 6-B, Geology and Groundwater, of the Final EIS for more information.

King County has already developed an Immediate Action Plan to deal with the unlikely event that a spill occurs due to pipe breakage. This plan is contained in the *Wastewater Treatment Division's Emergency Response Plan* (King County, Publication 280). Besides pipe breakage, the Plan is also used to handle other unlikely events such as fires, medical emergencies, hazardous material releases, power outages, violence and terrorist acts, earthquakes, and other natural disasters. Another document, the Overflow Manual, identifies procedures for responding to wastewater overflows at pump stations, treatment plants, and other wastewater facilities. The Manual includes procedures for emergency response, emergency communication, public outreach/media relations, emergency cleanup, overflow reporting, and debriefing. Both the Emergency Response Plan and Overflow

Manual will be updated to specifically incorporate the Brightwater System.

In the event an overflow, failure, or break is detected or reported in the County's existing plant or conveyance systems, an offsite responder immediately investigates the reported incident and reports to main control. An offsite supervisor responds to the scene and requests additional resources through main control, if necessary. If the incident is related to the pipeline/conveyance system, conveyance inspection personnel respond to the scene and establish bypass pumping to direct flows away from the point of failure. Finally, an on-scene incident commander determines threats to public health and immediately directs the posting of Seattle/King County Health Department warning signs around the affected area. Overflows and spills to surface waters are cleaned up as warranted on a case-by-case basis.

Routine inspection, as well as post-event inspection of critical pipelines and facilities, will minimize risks to groundwater. As discussed in Chapter 4 of the Final EIS, a project-specific spill prevention and response plan will be developed to prepare for and handle leaks or spills resulting from catastrophic events specific to the Brightwater System. Such plans could include redirecting flows, storing flows in tunnels, and pumping or trucking tank contents to adjacent, serviceable tanks to allow for immediate repair of damaged facilities. Other features that could be incorporated to further minimize potential impacts are identified in the Mitigation sections of Chapters 4 and 9.

References:

Ecology, 1998. *Criteria for Sewage Works Design (Orange Book)*. Department of Ecology Publication 98-37 WQ as revised 12/98.

WAC 173-240. *Submission of Plans and Reports for Construction of Wastewater Facilities.*

Response to Comment D3-28

Thank you for your comment.

Response to Comment D3-29

This Final EIS contains additional detailed analysis of the impacts and mitigation associated with the construction and operation of the conveyance pipelines for the Unocal System and the two Route 9 Systems. Please refer to Chapter 4 of the Final EIS for an analysis of tunneling impacts, associated mitigation, and projected impacts to the Cross Valley Aquifer.

Response to Comment D3-30

Thank you for your comment.

Response to Comment D3-31

Please refer to the response to the Washington State Department of Ecology, Comment W5-44. Information regarding building a conveyance pipeline through aquifer materials is discussed in Chapter 6 and Appendix 6-B, Geology and Groundwater, of the Final EIS.

Response to Comment D3-32

Please refer to Chapter 3 of the Final EIS for an updated description and comparison of project alternatives. Further detail on potential impacts to groundwater can be found in Chapter 6 of the Final EIS.

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D3-32 brief statements explaining the potential impacts and the differences in impacts between the different options to put the discussion more in the context of the SEPA process. A statement that gravity routes carry this type of risks while force mains carry another type of impact potential would help the reader and enhance the communication of the differences between options with regard to their potential to impact the environment.

D3-33 **Section 3.1.1.1 Site Location and Characteristics, p. 3-8, last paragraph**
"The Route 9 site is positioned entirely outside the CVWD's wellhead protection area and is in the discharge zone of the CVSSA, meaning that water in the aquifer under the Route 9 site is moving away from the aquifer."

It would be more appropriate to say that groundwater near the Route 9 site and its influent and effluent conveyances are flowing away from wellhead capture zones for CVWD.

D3-34 **Section 3.3.2.2 Table 3-9. Summary of Impacts and Mitigation Measures – Earth and Groundwater**

p. 3-36, 2nd Column
"The facility would be designed to incorporate all required measures to control and treat stormwater runoff"

A facility this size at the Route 9 site would best serve the community by infiltrating uncontaminated stormwater into the shallow groundwater system. The fact that the site may require perpetual dewatering suggests, however, that such infiltration is not realistic on the site itself. Has the possibility of infiltration elsewhere in vicinity of the site been considered?

D3-35 **p. 3-36, 2nd Column**
"Basic and supplemental design features could include additional protection against slow leaks to groundwater, such as leak detection systems, physical barriers such as liners in ponds and basins and seals or gaskets in piping."

This is a very generic discussion of possibilities without any real statement of what will work and how well. It is a list of the possible technologies rather than a statement of mitigations considered specifically for the circumstances.

D3-36 **p. 3-36, 3rd Column**
"...groundwater could be depleted due to aquifer drainage along the tunnel bore."

Systematic pressure grouting and/or bentonite sealing outside of all subsurface structures is essential to preclude the natural tendency of such structures to drain groundwater by creating preferential alternative flow routes. This type of sealing will be complicated for construction at this magnitude. Recognition of that fact should be given. Monitoring is also an essential mechanism for determining whether the sealing has been effective. At the very least, conceptual plans to correct the impacts created by failed sealing of the aquifer interface or compensation to

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Response to Comment D3-33

Chapter 6 of the Final EIS has been revised to better describe the location of the Route 9 site and conveyance corridors with respect to the CVWD Service Area, wellhead protection areas, and Cross Valley Sole Source Aquifer boundaries.

Response to Comment D3-34

The permanent dewatering system at the Route 9 site will be a series of underdrains that work via gravity. There will be no pumping needed in this dewatering system. Offsite infiltration options have not been considered since this would require the permanent pumping of dewatered flows from the project site, which is not considered practical.

Response to Comment D3-35

Please refer to the response to the Washington State Department of Ecology, Comment W5-43.

Response to Comment D3-36

Please refer to the response to the Olympic View Water & Sewer District, Comment D2-31.

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D3-36 impacted parties should be discussed. There is no way to know whether the proponent is aware of the significance or the cost implications such problems carry.

p. 3-36, 4th Column
"Standards for design and construction will be used to ensure quality of construction to prevent leaks. Routine inspections will be done to ensure integrity of all processes and pipelines."

D3-37 Standards should be designed as part of a quality assurance/quality control (QA/QC) program and made available for review. Perhaps the program should be administered by an independent agency. What sort of response is suggested in the event that the standards are not being met or are not adequate to provide the needed protection? It is not clear whether the proponent is willing to shut the project down until standards can be met or whether some other mechanism is proposed to assure standards are met by the contractor(s).

p. 3-36, 4th Column
"Pressurized force mains within lined tunnels, grouted and gasketed and bolted or pinned liner segments would minimize if not [eliminate reduce] the potential for breakage or leakage into the aquifer from a gravity-only tunnel or force main-gravity tunnel."

D3-38 These details should be adhered to during any subsurface construction to protect groundwater. It should be noted that this type of sealing is independent of that required to protect against rerouting of groundwater outside the structures. We suggest that nothing done during construction or afterward can "eliminate the potential for breakage or leakage" and that the word reduce be selected if any here though it is then redundant to "minimize" used earlier in the statement.

p. 3-36, 1st Column
"It is possible that leaks from treatment plants or influent pipes entering the site could enter the shallow groundwater system"

D3-39 This possibility though recognized is not further discussed in the document. This comment is to note that the DEIS acknowledges such impacts. We found no serious discussion of how the proponent intends to deal with such releases. This is an important aspect even if it can only be dealt with in a conceptual and hypothetical context at this time.

p. 3-36, 1st Column
"Upward groundwater pressures could crack or damage structures, with potential resulting leaks if upward groundwater pressure are not adequately addressed."

D3-40 No data is provided to show where this assertion comes from within the DEIS. If true, will this require constant dewatering? If continuous dewatering is ultimately to be proposed, what range of dewatering rates are being considered. It is impossible to know the implications to the water resources without at least a range or best guess at what type of dewatering is being considered.

D3-41 **p. 3-37, 4th Column**

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Response to Comment D3-37

Please refer to the response to the Olympic View Water & Sewer District, Comment D2-32.

Response to Comment D3-38

Please refer to the response to the Olympic View Water & Sewer District, Comment D2-33.

Response to Comment D3-39

This potential has been examined in the geotechnical analysis conducted after the publication of the Draft EIS. The results of this analysis can be found in Chapter 6 and Appendix 6-B, Geology and Groundwater, of the Final EIS.

Response to Comment D3-40

Please refer to the response to the Olympic View Water & Sewer District, Comments D2-4 and D2-35.

Response to Comment D3-41

Please refer to the response to the Olympic View Water & Sewer District, Comment D2-37.

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"Tunnel liner grouting along the tunnel length could prevent preferential flow along possible voids and eliminate or reduce aquifer depletion."

D3-41 A critical look at grouting techniques needs to be employed to ascertain the effectiveness of this to seal shaft annuli. Monitoring should be explicitly discussed as a mechanism to assure that sealing has been adequately accomplished.

p. 3-37, 4th Column

D3-42 *"Tunnel liner grouting along the entire length of the tunnel would prevent preferential flow along possible voids and eliminate or reduce aquifer depletion. Force main pipe in tunnel construction, lining of the tunnel, and emergency valving will reduce the potential for depletion of the aquifer by infiltration into a gravity-only or shallow gravity pipeline/tunnel. Routing inspection of the pipeline and monitoring of the aquifer will reduce any potential for aquifer depletions and corrective measures would be taken."*

Its important that the drafters of the DEIS are aware of these key issues. They should be addressed more thoroughly in a groundwater hazard discussion in this chapter. Some effort should be made to define, at least conceptually, what level of monitoring is being proposed and how it will be placed and used.

p. 3-38, 1st Column

D3-43 *"Should leaks to shallow groundwater occur, it is very unlikely that leaks would continue to migrate downward to the regional Advance Outwash aquifer because the aquifer is confined and under artesian pressure. Artesian pressure results in upward vertical gradients (pressure) that would inhibit flow of contaminants downward into the aquifer. Any contaminants that may reach the shallow, unconfined aquifer should tend to flow horizontally toward the discharge zone of the shallow aquifer of the Little Bear Creek."*

Are the aquifers artesian or flowing at land surface? An artesian aquifer only implies it is a confined system, a flowing well or spring indicates the artesian pressure pushes the water level above land surface. Even a confined aquifer can be contaminated through infiltration, which could in turn contaminate deeper systems if the appropriate conditions exist. The assumption that confined aquifers cannot be contaminated is incorrect.

Chapter 4 Earth and Groundwater
General Comments

D3-44 Chapter 4 does not adequately address potential impacts to groundwater resources for either the treatment plant sites or (particularly) the conveyance corridors, and as such, does not adequately provide specific mitigation for potentially effected users. There is a conspicuous lack of specific hydrogeologic information in this chapter. This together with the sparse and at times erroneous and inconsistent hydrogeologic descriptions presented, conveys the impression that too little attention has been paid to the subject of groundwater and the potential for the project to impact it. The general overall impression from the DEIS and particularly this chapter is that the focus was on impediments that the water resources might raise to the construction with very little attention given to impacts on the water resources caused by the construction or operation of the project.

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Response to Comment D3-42

King County agrees these are key issues, and a more thorough discussion of them is included in Chapter 6 and Appendix 6-B, Geology and Groundwater, of the Final EIS. Please refer to the response to the Washington State Department of Ecology, Comment W5-9, for further details.

Response to Comment D3-43

Please refer to the response to the Olympic View Water & Sewer District, Comment D2-39.

Response to Comment D3-44

Please refer to the response to the Olympic View Water & Sewer District, Comments D2-2 and D2-4, which provide a summary of groundwater impacts analyses conducted for the conveyance pipelines and treatment plant sites respectively.

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For the most part, this chapter was written as if the authors were unaware of the Olympic View Water and Sewer District WHPP. The conveyance corridors for the Unocal site and the 228th corridor for the Route 9 site both cross directly through the center of the one year capture zone. Further profiles constructed for the DEIS are insufficient to determine the relationship of the sewer tunnels to the aquifer. At least one option (the 228th forcemain) passes through Qva within the capture zone and others may pass through it or will be in close proximity.

D3-45 There is very little mention of the Olympic View Water and Sewer District's (OVWSD) wellhead protection plan (WHPP) or, for that matter those of other entities in the region within chapter 4 (or elsewhere in the DEIS). It is as if these critical, state mandated plans were not considered during the preparation of the DEIS, or analysis of potential impacts to groundwater resources. The only purveyor to which any significant discussion of a WHPP was made is Cross Valley Water District at the far eastern end of the project area. This aquifer has federal status under the sole source aquifer program. In that case, the DEIS asserts that because the project is outside the defined WHPAs for the Cross Valley Wells, the Cross Valley Wellhead Protection Plan is not relevant. This completely ignores the possibility that dewatering efforts at the Route 9 site could change the nature of groundwater flow and affect the productivity of those wells or route contaminants from the Cathcart Landfill into flow paths that coincide with well capture zones. Considerably more effort needs to be put forth in the DEIS with regard to effecting groundwater purveyors that have service areas, and more importantly that have recharge zones located along the conveyance corridors or within hydraulic reach of their sources. This assessment applies to both construction impacts and operational impacts.

D3-46 Of primary concern for the western portion of project area, is the fact that the conveyance corridors are routed through the Deer Creek Spring Capture Zone, the primary groundwater resource utilized by OVWSD, with no apparent effort made to properly define the resource, the relationship the project has to that resource or to provide mitigation/compensation responses. The Unocal site corridor (west of access portal #5) and the Route 9 site – 228th corridor (west of access portal #26) both pass directly through the one-year capture zone. Additionally, both options have access portal sites proposed to be located within the five year zone (#3 for Unocal and #24 for 228th). The Route 9 site – 195th corridor (the proffered option) passes just south of the capture zone (within 200 feet at the closest point) and has an access portal (# 23) sited in close proximity (200 to 300 feet) as well. Although not within the actual capture zone, the 195th corridor and access portal are up gradient from the Deer Creek Spring and, given the nature and scale of the proposed construction, there is a high-enough probability of impacting the resource, that concern is warranted for this route as well.

D3-47 Profiles provided in the Technical Appendices under earth and groundwater (Figures 2 through 5) are not of sufficient accuracy and detail to be useful in determining the position of each of the proposed mains relative to the Qva aquifer (the source aquifer feeding Deer Creek Springs). The geologic nomenclature used to describe each of the subsurface units include groups of descriptions rather than generally accepted single unit nomenclature (i.e. Qvt, Qva, etc.) Additionally, some of the borings used for subsurface data were projected onto the profile lines from some distance away and as a result, profiles imply unlikely or impossible stratigraphic relationships (i.e. recent alluvium below glacial deposits). It is not clear what the procedures for

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Response to Comment D3-45

Please refer to the response to Comment D3-5 in this letter and to the Washington State Department of Ecology, Comment W5-9.

Response to Comment D3-46

Please refer to the response to Comment D3-5 in this letter and to the Washington State Department of Ecology, Comment W5-9.

Response to Comment D3-47

Please refer to the response to the Olympic View Water & Sewer District, Comment D2-43.

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interpretation were, if any interpretation was intended. Geologic and hydrogeeologic interpretations are extended outward from individual borings no more than 300 feet but the position of the borings is typically indicated to be projected 1,000 feet to several thousand feet from the profile. Using the elevations of the various mains shown in the DEIS profiles and comparing these to the elevation of the Qva as determined in Robinson & Noble's WHPP, it appears that the force main for each of the conveyance route options places the line within 50 to 75 feet below the bottom of the Qva in the area of the OVSWD's capture zone, and the 228th route is actually indicated to be within the aquifer. More accurate, geology and hydrostratigraphic cross sections need to be generated before it is possible to know how the project relates to the groundwater resource interests of the District.

D3-47

Potential impacts to the Qva aquifer may occur generally in a number of ways. These include impacts occurring during construction and during operation of the system. Construction impacts could include contamination of the aquifer during tunneling or construction of access portals (i.e. introduction of petroleum products, access for surface chemicals spilled by the construction related activities or by unrelated events such as traffic accidents or fires). Dewatering during construction could result in a lowering or depletion of the aquifer. Permanent groundwater depletion could result if a conduit or drain is created either vertically at the access portals or along the length of the tunnel. Operational contamination could result if the pipes leak or there is excessive exfiltration particularly with the force main options. Obviously the worst case would be with the Unocal line which would be transporting untreated sewage, but leaks of secondary treated effluent could pose a health risks as well if it were to enter the aquifer or the spring.

D3-48

Mitigation for the various impacts can include a number of options. One option is to consider rerouting the lines so that the Unocal and 128th corridors pass outside the capture zone, or the 195th corridor passes further away. A deeper set below the bottom of the Qva could be accomplished by considering only gravity mains or deepening the force mains in the area of the OVSWD capture zone. Rerouting or deepening the tunnels will help to mitigate the potential for contamination, both during construction and later during operation. Once one of the corridor options is constructed, appropriate monitoring of the Qva aquifer and the Deer Creek Spring needs to be established. The monitoring should be designed to satisfy the technical data requirements to evaluate responses to both the construction and the operation phases of the Brightwater project. In addition to monitoring, an adequate contingency plan needs to be developed prior to construction. Other mitigation should include carefully conceived plans to accomplish sealing of potential conduits along tunnels and access portals. The proponent should also consider other options that might minimize the need for extensive dewatering (i.e. ground freezing, cofferdams, slurry-walls) wherever that is realistic.

D3-49

D3-50 **Section 4.1.1 Regulatory Environment, p. 4-1**

The section has insufficient discussion of the implications of identified regulations to the project. Those reviewing the project should not merely be told that regulations exist but rather should be informed of the implications of those regulations in the context of the project. The District needs to understand how the regulations constrain or facilitate the project. This entire section on regulations fails to relate regulations to impacts or impact abatement. Discussion of how the body of regulation being discussed eliminates the possibility of a given impact or provides some

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Response to Comment D3-48

Please refer to the response to the Olympic View Water & Sewer District, Comment D2-38.

Response to Comment D3-49

Please refer to the response to the Olympic View Water & Sewer District, Comment D2-38.

Response to Comment D3-50

The regulatory framework section of Chapter 4 has been expanded to discuss how the regulations apply to the Brightwater System. This discussion is included in the impact and mitigation sections of Chapter 4.

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D3-50 protection from adverse impacts that would otherwise occur is needed here to make the section pertinent to evaluation of environmental impact analysis.

D3-51 **Section 4.1.1.1 Federal Regulations – Sole Source Aquifer Designation, p. 4-3**
The DEIS spends a page defining "Sole Source Aquifer" (SSA) and a sentence dismissing it only because they do not intend Federal money to be used as a funding source (there is always Federal money somewhere in this type of project even if given through a state grant). It is inappropriate for the proponent to dismiss the sole source designation, which is a formal recognition of the importance of this resource, merely on the grounds that they are outside the reach of the enforcement mechanism of denying Federal money to a project. The reason the Cross Valley Aquifer was given this designation is to make sure that the critical nature of the aquifer is recognized. It does not appear from the tone of the DEIS that the significance of adverse affects on the Cross Valley Aquifer has been accepted or understood by the proponent. More attention must be given to the fact that this aquifer serves as a sole source of potable water for a significant part of the region surrounding the Route 9 site.

D3-52 **Section 4.1.1.3 Local Regulations, p. 4-5**
It is presumed that Snohomish County has ordinance language protecting Aquifer Recharge and Wellhead Protection areas or will have as part of their obligations under the GMA. Yet, there is no discussion of the regulation of these sensitive areas.

D3-53 **Section 4.1.1.3 Local Regulations Page 4-6, 3rd paragraph, line 6:**
Typo – "Vashon State" should read "Vashon Stade"

D3-54 **Section 4.1.2.3 Regional Groundwater Regime, p. 4-6**
"Where the till or other low permeability stratum is absent, most of the flow is likely downward. Through much of the greater King and Snohomish County area, groundwater flow beneath the till is usually under confined conditions."

Groundwater systems where the Qva is found beneath till exist as both confined and unconfined aquifer conditions. It is inappropriate to disregard unconfined aquifer conditions beneath till since that condition will have a bearing on the nature of contaminate fate and transport in the event of a spill. The DEIS appears to erroneously simplify the issue by presuming that Qva aquifer material is confined where till overlies it. Specific conditions should be defined before analysis of risk and effectiveness of mitigation can be accomplished.

D3-55 **Section 4.1.3.1 Unocal Site – Groundwater, p. 4-12 1st full paragraph**
"Groundwater conditions at the Unocal site are typical of the regional groundwater conditions."

This statement is incorrect. The Unocal site is part of an atypical discharge band along the western boundary. Most of the critical hydrogeology is missing and the deeper aquifers below the site are salty. It would be a mistake to consider this area typical of the region affected by this project.

D3-56 **Section 4.1.3.2 Route 9 - Groundwater Site, p. 4-16, second paragraph**

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Response to Comment D3-51

King County did not intend to dismiss the sole source aquifer designation and requirements because the project does not use federal funds. A review of the requirements indicates that the environmental review and groundwater studies conducted for the Final EIS should meet the substantive requirements of the sole source aquifer project review. Please refer to Appendix 6-B, Geology and Groundwater, of the Final EIS for additional information.

Response to Comment D3-52

The implementation of regulations is described in the impacts and mitigation sections of the Final EIS chapters. The information has been organized such that the applicable regulations are initially cited. Then, an evaluation of the project is conducted to see what impacts, if any, could be expected from constructing and operating the Brightwater System. Finally, mitigation approaches and achieving the necessary regulatory requirements are cited.

Response to Comment D3-53

Thank you for your comment. The typographical error has been corrected.

Response to Comment D3-54

Please refer to Appendix 6-B, Geology and Groundwater, of the Final EIS for more detailed geologic and hydrogeologic interpretations of plant sites and the conveyance corridors. Additional subsurface exploration programs have been conducted since the Draft EIS, and geologic interpretations and cross sections have been developed that more precisely reflect geology conditions in the Brightwater System Area.

Response to Comment D3-55

Please refer to Appendix 6-B, Geology and Groundwater, for more detailed geologic and hydrogeologic interpretations of plant sites and the conveyance corridors. Additional

subsurface exploration programs have been conducted since the Draft EIS and geologic interpretations and cross sections have been developed that more precisely reflect geology conditions in the Brightwater System area.

The statement that the Unocal site groundwater conditions are “typical of the regional conditions” has been revised to reflect site’s atypical conditions, including groundwater discharge to Puget Sound.

Response to Comment D3-56

Additional studies including groundwater modeling using the Cross Valley Water District (CVWD) WHPA model information were conducted to evaluate potential impacts to CVWD wells. Results of modeling showed no potential impact to the closest CVWD wells from dewatering. For additional information, please refer to Appendix 6-B, Geology and Groundwater, of the Final EIS.

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second half of forth sentence
"*However, no portion of the Route 9 site crosses into the CVSSA's wellhead protection area…*"

D3-56 The Route 9 site is actually located directly adjacent to the wellhead protection area as drawn (figure 4-6). Wellhead protection area boundaries are, to some degree, arbitrary, and in this case it is separated by a relatively short distance (approximately 1200 feet according to figure 4-6) in the down-gradient direction from the buffer zone boundary. The document should acknowledge proximity to this feature rather than discount it or play down the issue of proximity to the (Cross Valley Water District (CVWD) WHPA, and Well 9 site construction/operation issues should be discussed with increased sensitivity because the site is located near the WHPA.

Section 4.1.3.2 Route 9 Site, pp. 4-16, 4-17
The confusion/contradiction between statements describing the geology of the Route 9 site alluded to above is discussed more explicitly below.
Geology and Soil Types
Pre-Vashon Glacial Lake (Glaciolacustrine) Deposits (Interglacial)
D3-57 Statement indicates that clay was encountered in a geotechnical boring between 50 and 73 feet bgs and was interpreted to be pre-Vashon lacustrine (proglacial lake) deposits. In following section, **Pre-Vashon fine Sand/Silt Deposit (Interglacial)**, statement indicates that a unit interpreted to be Whidbey Formation was encountered in same boring below 73 feet bgs. Then several sections later **Section 4.1.3.2 Route 9 Site, p. 4-17, first paragraph, last sentence, Groundwater** states, *"The bottom of this confined unit* (referring to Qva) *was not encountered because drilling* (referring to geotechnical borings) *only extended to about 100 feet bgs."* This inconsistency should be resolved and an actual cross section showing the data of test holes and their interpretation should be provided.

Section 4.1.3.2 Route 9 Site – Groundwater, p. 4-17 1st paragraph
"The top of a deeper confined aquifer (Vashon Advance Outwash sand unit) lies between 35 and 75 feet bgs and results in artesian pressures (groundwater under pressure). The bottom of this confined unit was not encountered because drilling only extended to about 100 feet bgs."

D3-58 This is not consistent with geologic description presented elsewhere. The geologic map of the site presented as Figure 4-5 indicates the surface geology of the site is, for the most part, Qva. The unit, therefore could not be confined at this site. Further, the statement that the bottom of the Qva was not encountered is inconsistent with the statement that the deepest test hole on the site encountered the Whidbey formation which must underlie the Qva. Understanding of the hydrostratigraphy is essential to analysis of the potential impacts on this sole source aquifer. Clearly, not everyone on the proponents consulting team has the same interpretation of the site geology.

D3-59 **Section 4.1.3.2 Route 9 Site – Groundwater, p. 4-17, 2nd paragraph**
"A portion of the Route 9 site (about 30 acres) crosses the southern boundary of the Cross Valley Sole Source Aquifer (CVSSA) (US EPA, 1987) (Figure 4-6); however, no portion of the Route 9 site crosses into the CVSSA's wellhead protection area, the portion of the aquifer from which drinking water is pumped to users."

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Response to Comment D3-57

The inconsistencies in the Draft EIS that you noted have been resolved by additional data gathering, testing, water level readings, and geologic interpretation of the subsurface conditions at the Route 9 site. Please refer to Appendix 6-B, Geology and Groundwater, of the Final EIS for revised interpretations of the Route 9 geology, as well as several geologic cross sections through the site.

Response to Comment D3-58

Please refer to Appendix 6-B, Geology and Groundwater, of the Final EIS for a revised and more detailed discussion of the Route 9 site geology. Since the Draft EIS, the description of the site geology has been refined based on additional subsurface data obtained from drilling and from sampling seven borings (one boring to 500 feet in depth) at the Route 9 site.

Response to Comment D3-59

As part of the Final EIS, detailed groundwater impact analyses have been conducted to evaluate the potential effects of construction and operations of the Route 9 Treatment Plant on the Cross Valley Aquifer and all of its users. Please refer to the response to D3-5 of this letter, and Appendix 6-B, Geology and Groundwater, of the Final EIS.

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Other entities use CVA as well. These users cannot be ignored with regard to the impacts of dewatering. Further, the wellhead protection areas are defined using the potentiometric relationships under pre-project conditions. It is likely that dewatering at the Route 9 site will change this surface, perhaps unfavorably. Even if the up-gradient relationship of the wells to the project is maintained as is the likely case, the potential to impact the up-gradient wells through alteration of the water budget and subsequent lowering of the potentiometric surface still exists. The potential for impact to the Cross Valley wells cannot be dismissed on the basis of proximity alone. D3-59

Section 4.1.3.2 Route 9 Site, p. 4-17, first paragraph, last sentence
Groundwater
D3-60 *"The bottom of this confined unit* (referring to Qva) *was not encountered because drilling* (referring to geotechnical borings) *only extended to about 100 feet bgs."*

This statement is not consistent with the geology described elsewhere in the DEIS.

Section 4.1.3.2 Route 9 Site – Water Supply Wells, p. 4-18, 2nd full paragraph
D3-61 *"The City of Woodinville installed two water supply wells in 1994 but did not obtain a water right to use them for municipal supply."*

These wells should not be disregarded merely for lack of water right. They have still defined a water resource in proximity to the project for which impacts must be considered

Section 4.1.3.2 Route 9 Site – Water Supply Wells, p. 4-18, 3rd full paragraphs
"The water table elevation and intake level in the Wellington Golf Course well are estimated to be 300 feet NGVD, higher than the ground surface elevation at the project site. The four domestic and one industrial wells are interpreted as being installed in the Advance Outwash Aquifer and the domestic wells are under artesian pressure."

D3-62 This raises the question of whether breach of the confining layer might create a flowing condition at the site. This is also another instance where described geology is inconsistent. The site geology presented in the map shows Vashon Advance outwash sediments are exposed at land surface. The fact that wells in proximity to the site and therefore near the eastern end of proposed conveyance tunnels are confined suggests that problems of aquifer drainage may occur in relation to the placement of these structures. The possibility of confined hydraulic heads causing upward flow and thereby draining the confined aquifer should be addressed. They do not appear to be. Again the inconsistency of interpretation of geology and hydrogeology of the site diminishes ones confidence in the effort.

Section 4.1.3.2 Route 9 - Water Supply Wells, p. 4-18, second paragraph, last sentence
D3-63 The language appears to down-play the proximity to WHPA rather than face it.
Figure 4-7, the legend indicates dotted line represents Proposed Route 9 site, but the line looks like it represents southwest portion of CVSSA boundary.

D3-64 **Section 4.1.3.2 Route 9 - Water Supply Wells, p. 4-18**
The investigation does not appear to have looked at (or for) well logs in the vicinity of the Route

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Response to Comment D3-60

Appendix 6-B, Geology and Groundwater, of the Final EIS summarizes the updated geologic interpretation of the Route 9 soil deposits based on the additional data-gathering program conducted since the Draft EIS. The geology of the Route 9 site was further evaluated by drilling and by sampling seven additional borings (one boring to 500 feet below the ground surface) and conducting additional laboratory testing (including carbon dating of organic material recovered from soil samples). This additional drilling, sampling, testing, and interpretation of the data indicate that the surface material at the site consists of recessional outwash (Qvr) underlain by a diamict deposit (Qvd) and till (Qvt). The Qvd and Qvt provide a somewhat confining layer over the majority, but not all, of the site. The deep 500-foot boring sampled the soil deposits beneath the confining layer. These deposits consist of inter-bedded pre-Vashon glacial fluvial and glacial lacustrine deposits. The updated interpretation of the Route 9 geology is consistent with the geology described elsewhere in the Final EIS.

Response to Comment D3-61

The purpose of this section is to describe the groundwater use in the project vicinity. The Final EIS has been revised to reflect that the Woodinville Water District, rather than the City of Woodinville, owns these wells. The Woodinville wells have been included in the impact analysis.

Impacts are described in the Final EIS in terms of regional water table effects (drawdown) and areas that will experience the drawdown. Effects on individual wells generally were not evaluated but may be interpreted based on the location of a well within areas affected by drawdown. The Woodinville wells are located in an area that is not expected to experience drawdown from dewatering. Please refer to the response to the Washington State Department of Ecology, Comment W5-15, and Appendix 6-B, Geology and Groundwater, of the Final EIS for additional information. For private domestic

wells, groundwater analyses and subsequent areas of potential impact indicate that adverse risk to well users is negligible. However, should adverse impacts to private domestic wells occur, King County will be implementing a Potable Water Supply Program to address the impact as described in Chapter 17 of the Final EIS.

Response to Comment D3-62

Please refer to Comment D3-60 in this letter that summarizes the re-interpretation of geology at the Route 9 site as a result of additional soil borings and testing. As you have noted in your comment, domestic and industrial wells upgradient (to the east) of the site are installed in the Advance Outwash (Qva). This deposit is of higher elevation than the Route 9 site and is not present at the site. Therefore, the shallow unconfined aquifer present at the surface of the Route 9 site (Qvrf) is not hydrologically connected to the Qva aquifer where the upgradient wells draw their water, and pumping from the Route 9 site Qvr aquifer would not influence the upgradient Qva wells. Please refer to Appendix 6-B, Geology and Groundwater, of the Final EIS for a detailed presentation and discussion of this relationship between the site and upgradient areas.

Response to Comment D3-63

The Draft EIS figures have been revised to more clearly show the locations of wells, wellhead protection areas, water system boundaries, and other critical water supply features with respect to the proposed Brightwater System locations. Please refer to Appendix 6-B, Geology and Groundwater, of the Final EIS for revised text and figures.

Response to Comment D3-64

Locations of private and public wells in the vicinity of the Brightwater System that are publicly documented are included in the Final EIS. Please refer to Appendix 6-B, Geology and Groundwater, of the Final EIS, which describes the correlation between the Cross Valley Water District well information and well information gathered at the Route 9 site.

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D3-64 9 site within the CV wellhead protection area. Such wells would show whether the proximity of the Route 9 site is an issue or not.

D3-65 **Section 4.1.3.2 Route 9 - Water Supply Wells, p. 4-18, last paragraph**
The proponent asserts that artesian conditions below the Route 9 site indicate it is a discharge zone and as such is less prone or not prone to downward migration of contaminates. This is not necessarily true –If flowing artesian conditions exist, then the argument might hold, otherwise the creation of a positive drive head downward remains and the threat exists. Any claim of protection by virtue of natural heads in the aquifer would require specific water level/potentiometric data for the site, very little specific data is offered. Further, the conditions now are clearly different from those that will exist at the time of construction and the associated dewatering. No analyses of these conditions are discussed. There is no substantial reason to accept the assertion that the protection that is claimed as inherent to the site conditions exists beneath this site or would continue to exist under dewatering conditions.

D3-66 **Section 4.1.3.2 Route 9 Site – Soil and Groundwater Contamination, p. 4-19 2nd full paragraph**
This entire discussion focuses on the possibility of already contaminated soils affecting the construction of the project. There is no discussion in the entire section that discusses what threat to groundwater quality exists as a consequence of the project. This is a short-coming of all areas where groundwater contamination is discussed. The issue of concern to the non-proponent reviewer is whether the project will cause contamination of the groundwater not whether contaminated groundwater will impact the project.

D3-67 **Section 4.1.4 Conveyance Corridors, p. 4-19 4th and 5th full paragraphs**

"Table 4-1 provides specific information on existing conditions for each conveyance corridor and segment, including portal sit ing areas. More detailed descriptions of geologic conditions are provided in the Earth and Groundwater Technical Appendix."

The Earth and Groundwater Technical Appendix does not provide any substantial descriptions of the pertinent hydrogeology. This appendix provides very generic discussions of geologic units that would be equally true for most settings of the Puget Sound Region. It gives uninterpreted profiles with simplistic renderings of the surface geology and a few simplified geologic logs from test wells along the proposed tunnel routes. This should not be considered an appropriate basis for an analysis of potential impacts to the groundwater resources. Further, the document is not internally consistent with the descriptions provided in this appendix.

D3-68 **Table 4.1. Geology, Soils, Groundwater, and Mapped Hazard Areas in Conveyance Corridors, p. 4-20**
Overall this is a good table. It has a few points of confusion and is almost too generic to be of use in discussing impact implications but an acceptable summary. The reference stating "same as Unocal 195th Street Corridor" on the top of page 4-23 is confusing in that there is no designation elsewhere in the table that is so labeled.

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Response to Comment D3-65

After further evaluation of the hydrogeologic conditions at the Route 9 site, King County has determined that the site is situated in a regional groundwater discharge area characterized by upward groundwater flow. An aquitard also is present between the shallow (water table) aquifer beneath the site and the regional groundwater that serves as a water supply to the Cross Valley wells. Both the aquitard and the upward flow of groundwater would act to inhibit the downward migration of any contaminants released at the surface. For additional information regarding potential contamination issues, please refer to the response to the Washington State Department of Ecology, Comment W5-43.

Response to Comment D3-66

Revisions to the Final EIS have expanded the discussions of potential contamination from the treatment plant to the environment. Please refer to the response to the Washington State Department of Ecology, Comment W5-43, for a summary of these discussions, and to Appendix 6-B, Geology and Groundwater, of the Final EIS for details.

Response to Comment D3-67

Documented in the Final EIS are significant additional subsurface data gathering programs, geologic interpretations, and hydrogeologic evaluations and numerical analyses of groundwater effects during construction and operational phases of the Brightwater System. Please refer to Appendix 6-B, Geology and Groundwater, of the Final EIS.

Response to Comment D3-68

The reference in the table stating "same as Unocal 195th Street Corridor" has been replaced with a description of anticipated conditions.

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Section 4.1.4.5 Conveyance Corridors – Groundwater, p. 4-26, Last paragraph
"...groundwater flows vertically between aquifers. For the project area, regional recharge for the deeper aquifers takes place predominantly along the western front of the Cascade Mountains several miles east of the project area."

D3-69 Not a proper representation, it puts too much emphasis in the generic diagram presented as Figure 6 in the Earth and Groundwater Technical Appendix. Since the vertical component of any flow system is always served first (gravity requires it), the nature of recharge cannot be reduced to the regional generality presented in the figure. This is particularly inappropriate when discussing impacts of a specific project upon a specific groundwater regime. An appreciable amount of water is transmitted vertically through the laterally discontinuous and highly variable sediments of the Brightwater project area.

Section 4.1.4.5 Groundwater - Water Supply Wells, p. 4-27, first and second paragraph
D3-70 There is only a brief mention of the proximity of Route 9 conveyance corridors to Cross Valley. The potential for these corridors to create preferential drains in the aquifer should be recognized and analyzed. The actual southern and western boundaries to this groundwater regime are not so well known that proximity to the boundaries should be ignored.

Corridors:
Section 4.2.1.1 Construction Impacts - Groundwater Control and Dewatering, p. 4-31
D3-71 Dewatering at the Route 9 site could potentially impact production at Woodlane Well (Cross Valley) or other close wells by lowering the water table, depending on required volume of dewatering and/or time of year. This should at least be investigated to some degree and provisions made to monitor. Potential mitigation should at least include a plan of action that addresses problems if they arise during construction (discussed somewhat generically in 4.3 Mitigation Measures, Groundwater Control and Dewatering (page 4-52 through 4-53).

Section 4.2.1.1 Construction Impacts – Groundwater Control and Dewatering, p. 4-31, Last paragraph
"Construction of some treatment plant structures will take place below the groundwater table, necessitating groundwater control during construction. Depending on the soil characteristics and construction methods, groundwater control may consist of pumping groundwater at volumes ranging from a few gallons per minute (gpm) to several thousand gpm."

D3-72 There is no discussion of how dewatering may affect the aquifer. The discussion of dewatering at these sites at possible rates of thousands of gallons per minute with a mere mention that this may disrupt flow to wells and springs is disturbingly cavalier. This level of dewatering can have regional affects on aquifers. In the case of the Route 9 site, those affects would be on a registered sole source aquifer. This should raise a red flag worthy of detailed discussion. It is mentioned in the DEIS as if insignificant. More attention is given to how the volumes of water might be disposed of and whether the water produced will have contamination issues that could complicate the construction of the project. This section seems to miss the point that this level of dewatering can be a significant issue with regard to regional water resource management.

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Response to Comment D3-69

Please refer to the response to the Olympic View Water & Sewer District, Comment D2-53.

Response to Comment D3-70

King County agrees that the boundaries of the "Cross Valley Aquifer" are not well known. The proximity of conveyance corridors to the Cross Valley area is now referenced in a number of locations in Appendix 6-B, Geology and Groundwater, of the Final EIS. For further information on the contents of Appendix 6-B, please refer to the response to Comment D3-5 of this letter.

Response to Comment D3-71

As part of the Final EIS, detailed groundwater impact analyses have been conducted to evaluate the potential effects of construction and operations of the Route 9 Treatment Plant on the Cross Valley Aquifer and all of its users. Please refer to the response to D3-5 of this letter and Appendix 6-B, Geology and Groundwater, of the Final EIS.

Response to Comment D3-72

Additional subsurface data have been gathered and groundwater impact analyses specific to the plant sites have been conducted since the Draft EIS; these address the concerns you raise in this comment. Please refer to the response to the Olympic View Water & Sewer District, Comment D2-4.

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D3-73 **Section 4.2.1.1 Construction Impacts - Contaminated Soil and Groundwater, p. 4-32**
As in the Groundwater Control and Dewatering section, there is no mention of potential impacts to nearby well(s) (i.e. Woodlane Well or other CVWD wells). Provision for water level and water quality monitoring are essential and should be presented in the DEIS. A mitigation plan to show that dewatering affects at CVWD wells can be addressed should also be presented.

D3-74 **Section 4.2.1.1 Construction Impacts – Excavated Soil Reuse and Offsite Haul, p. 4-32, 2nd and 3rd full paragraphs**
The amount of excavation being discussed in this section is considerable. This level of excavation in the vicinity of a near-surface confined aquifer (Route 9 site) has implications to aquifer stability yet there is no discussion of this anywhere in the document. Excavation and building of a combined retaining wall 130 feet high at the Unocal site has implications of possibly rerouting discharge from the Deer Creek Springs and that is not discussed anywhere in the document either. Major excavation in proximity to groundwater resources can be more disruptive to those systems than is recognized in the DEIS.

D3-75 **Section 4.2.1.1 Construction Impacts - Table 4-2, p. 4-34**

The issue here is the same as that immediately above. The proponent needs to address potential impacts and establish monitoring and mitigation within the Groundwater Control and Dewatering section (impacts to production at Woodlane Well and possibly other CVWD wells), and the Contaminated Groundwater section (impacts to water quality in aquifers as a result of spills or by mobilization of existing contaminants by changes in the direction of groundwater flow - changes in the fate of Cathcart Landfill leachate for instance).

D3-76 **Table 4-2. Summary of Potential Earth and Groundwater Impacts and Mitigation – Treatment Plant Sites, p. 4-34, 5th and 6th Row**

There is no mention of construction practices that could cause contamination or the basic fact that they are handling raw sewage, an obvious potential source of groundwater contamination. This table, like many sections appears more concerned with how existing contamination will affect the project and much less so with how the project might cause groundwater contamination.

D3-77 **Section 4.2.1.1 Construction Impacts - Route 9 Site, p. 4-35, 3rd sentence**
"Only two site structures, the influent and effluent pump stations, would penetrate into the lower regional aquifer."

This should be discussed in greater detail in Groundwater Control and Dewatering, and Soil and Groundwater Contamination sections. This appears to be down-played by using the phrase *"only two site structures"* and in placing it at the end of the section. Construction within the confined aquifer and related dewatering is a significant endeavor with regard to water resource protection. This type of dewatering environment is different from water table dewatering in both method and ramification. It should be more thoroughly discussed in the DEIS. Dewatering of that aquifer would be expected to change the aquifer in ways that would affect the CVWD wells in some way.

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Response to Comment D3-73

As part of the Final EIS, detailed groundwater impact analyses have been conducted to evaluate the potential effects of construction and operations of the Route 9 Treatment Plant on the Cross Valley Aquifer and all of its users. Please refer to the response to D3-5 of this letter and Appendix 6-B, Geology and Groundwater, of the Final EIS.

Response to Comment D3-74

Since the Draft EIS, the site layouts have been modified and the cut-and-fill balances recalculated. The relative amounts of excavation, however, are similar to those described in the Draft EIS for each of the sites with the following exception:

The treatment plant structures at the Route 9 site have been moved uphill to the eastern portion of the site where groundwater is deeper than in the topographically lower western portion of the site. Therefore, the similar-depth excavation cuts for structures are now at higher elevations above the near-surface unconfined aquifer, resulting in no impact to the aquifer other than the dewatering necessary to construct the portions of the structures below the water table.

The effects to the Deer Creek Springs from construction of the Brightwater System are described in Appendix 6-B, Geology and Groundwater, of the Final EIS and are projected to be negligible.

Response to Comment D3-75

Please refer to the responses to Comment D3-5 of this letter and to the Washington State Department of Ecology, Comment W5-43.

Response to Comment D3-76

Please refer to the response to Comment D3-5 in this letter.

Response to Comment D3-77

Since the Draft EIS, the effluent pump station has been eliminated from the planned structures at the treatment plant, leaving the Influent Pump Station (IPS) as the only structure deep enough to penetrate into the lower pre-Vashon confined aquifers. The expected construction procedures, including groundwater depressurization needs, are discussed in detail in Appendix 6-B, Geology and Groundwater, of the Final EIS. As described in Appendix 6-B and summarized in response to Comment D3-5 of this letter, no significant adverse impacts to water resources are anticipated as a result of construction and operation of the IPS at the Route 9 site.

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D3-78 **Section 4.2.1.1 Construction Impacts - Route 9 Site, p. 4-35, 7th sentence**
"Any impacts to water levels in wells by dewatering would be expected to be minimal and temporary."
What is the basis for this sweeping conclusion. Dewatering at this scale elsewhere in the Puget Sound region has had significant impact to nearby wells and in some cases wells at more than a mile distance. Actual estimates of the predicted impacts to Woodlane Well and other CVWD wells should have been generated for the worst case dewatering scenarios. In addition to well hydraulic affects, analysis of the likelihood of the proposed dewatering changing the flow characteristics and water budget of this protected aquifer should have been accomplished. Performance of hypothetical analyses of these aspects of the impact potential would provide much-needed insight to this.

D3-79 **Section 4.2.1.2 Operational Impacts - Soil and Groundwater Contamination, p. 4-36**
There is no evidence or argument given for the conclusion that the likelihood of a pipeline breaking and leaking is considered minimal. The Puget Sound region is seismically very active and studies have concluded that greater damage occurs in this particular region as a result of amplification of energy from smaller quakes because of the geometry of the sediment-filled Seattle basin. In the opening of this chapter (page 4-2) under Seismic Design Standards it states, "The UBS rates the Puget Sound region as a Seismic Zone 3, an area of moderate to high seismic risk."

D3-80 The subject of exfiltration is not addressed at all in this chapter. It appears that there is an underlying assumption that the pipes and conveyances will not leak. There is no technical or statistical evidence given to support such a position. In general, piping leaks. That is a fact of life regardless of what is being pushed through it. Most discussions of impact deal with how much is expected to leak, where it will go and what problems it will cause when it gets there. This DEIS has taken a position that this piping system will not leak but has not provided any evidence as to why this design is so reliable while all others are not.

D3-81 **Section 4.2.1.2 Operational Impacts – Route 9 Site, p. 4-36, Last paragraph**

"if a leak were to occur, the likelihood that leaks would continue to migrate downward to the regional Advance Outwash aquifer is very low."

Considering that the site geology as presented on Figure 4-5 shows Qva at land surface and other portions of the document describe significant excavation on the site, this is not a consistent statement. Even if the reference to a confined aquifer beneath the site were the case, the probability of downward leakage with a high volume spill is not precluded. The probability is not so low that it should merely be disregard.

D3-82 **Section 4.2.1.2 Operational Impacts - Route 9 Site, p. 4-37**

The document is again discussing artesian pressure of Qva under Route 9 site. Is the vertical direction of groundwater flow really known for the site? The DEIS makes statements claiming that upward flow of groundwater will minimize or prevent contamination from migrating vertically downward to the Qva. Since no mitigation is proposed because this assertion is made,

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Response to Comment D3-78

Please refer to the response to Comment D3-5 of this letter.

Response to Comment D3-79

Please refer to the response to the Olympic View Water & Sewer District, Comment D2-66.

Response to Comment D3-80

The proposed lining system described in the Final EIS will control infiltration/exfiltration in the tunnel. Please refer to Appendix 6-B, Geology and Groundwater, of the Final EIS.

Response to Comment D3-81

As noted in prior responses, additional subsurface data gathering (seven additional borings and multiple piezometer installations) has occurred at the Route 9 site since the Draft EIS. One boring was drilled to a depth of 500 feet below the ground surface. These additional data have enabled the geologic interpretation at the Route 9 site to be refined. Appendix 6-B, Geology and Groundwater, of the Final EIS provides a detailed description and multiple new geologic cross sections of the refined geologic interpretation. As a result, the statement referenced in this comment has also been revised and is consistent with the site geology.

Response to Comment D3-82

Please refer to the response to Comment D3-60 in this letter, which summarizes the re-interpretation of geology at the Route 9 site as a result of additional soil borings and testing. It is acknowledged that the confined aquifer under pressure is the deeper pre-Vashon aquifer and not the Qva aquifer. Data continue to be gathered to ascertain gradients at the site, and it is further acknowledged that the confining layer between the surface unconfined aquifer (Qvr) and the lower pre-Vashon aquifer should be considered a "leaky" confining layer. This assumption was included in the groundwater dewatering analyses. King County also agrees that till will

slow infiltration but not stop it. Revised hydrogeologic interpretation is included in Appendix 6-B, Geology and Groundwater, of the Final EIS and includes both horizontal flow to Little Bear Creek and vertical flow based on the site geology.

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it should be shown specifically what the head difference is between the perched water and the Qva when describing the interpreted hydrogeologic conditions at the site. The attitude regarding this potential seems somewhat cavalier, considering Qva is designated as a SSA. Also, till will slow infiltration but not stop it. Is it the proponents assertion that all flow will move horizontally to discharge at Little Bear Creek once it reaches the perched zone?

This Discussion is presuming the hydrogeologic interpretation upon which the discussion is based is the correct one. The site map shows Qva at land surface over most of the Route 9 site. This is also the description in some of the DEIS. The map interpretation certainly does not support the statements that the Qva is confined at the site. This inconsistency of the described site hydrogeology must be resolved. D3-82

Section 4.2.2.1 Conveyance Corridors – Construction Impacts, p. 4-37, 2nd and 3rd Paragraphs

"It should be noted that these tables represent worst-case impact characterizations indicated the type of impact that could occur, but would not necessarily occur."

D3-83 All of the corridors and conveyance options have significant potential to harm the regional aquifers and yet these impacts are given very little discussion and no proper definition within the impact section of this chapter. How will the tunnels be sealed to assure that no preferential transfer routes are created along the outside of the portal and tunnel structures? This is not as easy as one might think. How does the proponent propose to know if the sealing is effective? There is no discussion of a water level monitoring plan.

Sensitive Area Impacts

D3-84 There is no mention of wellhead protection areas. These are recognized sensitive areas and they exist within or near the project regardless of the option selected.

Table 4-3. Summary of Potential Impacts by Corridor, P. 4-38, 2nd and 3rd Rows

D3-85 The amount of possible dewatering indicated is very high. Such dewatering values cannot credibly be put into a table such as this and then ignored in the impact analysis. Without better specific definition of the groundwater resources in a given area and a meaningful analysis of hydraulic responses of those aquifers to the proposed dewatering, it is impossible to discuss the level of impact that this endeavor will impose. All of the alternatives have substantial potential to harm the aquifers whether we are discussing the Deer Creek Springs to the west or the Cross Valley Aquifer to the east. This aspect of the DEIS is not adequate to know the level of impact but that an impact will occur at these levels of dewatering is certain.

D3-86 **Section 4.2.2.1 Construction Impacts – Groundwater Control and Dewatering, p. 4-39, 2nd Paragraph**

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Response to Comment D3-83

Please refer to the response to the Washington State Department of Ecology, Comment W5-9.

Response to Comment D3-84

Wellhead protection areas have been added to the Sensitive Areas Impacts section.

Response to Comment D3-85

Please refer to the response to the Olympic View Water & Sewer District, Comment D2-70.

Response to Comment D3-86

Please refer to the response to the Olympic View Water & Sewer District, Comment D2-71.

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"Disposal of large volumes of dewatering discharge will require coordination with local jurisdictions; groundwater containing high concentrations of sediment or contaminants would require special disposal methods."

D3-86 Impact to springs and wells is given little mention here but is a primary concern. Again, the focus appears to be on how the dewatering will affect the project rather than on how it will impact the aquifers. This tendency suggests the focus of this chapter was feasibility of the project not analysis of the environmental impacts.

Table 4-4. Summary of Potential Dewatering Impacts and Mitigation by Portal Site Area, p. 4-40

D3-87 This table indicates that the spring flow will be reduced at Deer Creek Spring and discusses methods of disposal of dewatering discharge water. It would seem practical to investigate use of the dewatering water by the purveyors whose sources might be impacted.

Section 4.2.2.2 Operational Impacts – Groundwater Contamination, p. 4-45, 5th Paragraph

"Large-scale breakage of a pressurized conveyance system (i.e. the force main options) could result in discharge of wastewater influent or treated effluent into the shallow aquifer and possible contamination of domestic and Group A (municipal) water supply wells. The likelihood of the pipeline or tunnel breaking or leaking appears minimal, but could result from movement on an unknown fault that might intersect tunnel alignment."

D3-88 Knowing it is broken is hardly mitigation. Saying it is unlikely does not excuse the need for contingency plans. No such plans are discussed. No monitoring program to alert water users to a contamination event is proposed. This is such a potentially devastating event that low probability is hardly a comforting aspect. No presence of an influent force main of this size within an aquifer used for potable water to serve communities can be justified. This conveyance and any associated options should be removed from consideration

Table 4-5. Tunneling Methods and Impacts, p. 4-47, 1st and 2nd Row

"Up to > 0.25 acres impacted by construction…"

Internally, this is a contradictory statement. Is it "up to" or "greater than"? It cannot be both.

D3-89 What type of fuel do the tunneling machines use; is it piped to the face or brought in by container? What amount of fuel is the greatest possible contamination event going to introduce (possibly directly into an aquifer)? How will the possibility of a spill be minimized? What contingency plans are to be in place and how quickly can they be implemented? BMPs in such unique circumstances must be spelled out not just alluded to.

D3-90 **Section 4.3.1.1 Mitigation Measures – Construction, Groundwater Control and Dewatering, p. 4-52, 1st paragraph in the section**

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Response to Comment D3-87

Please refer to the response to the Olympic View Water & Sewer District, Comment D2-72.

Response to Comment D3-88

Please refer to the response to the Olympic View Water & Sewer District, Comment D2-76.

Response to Comment D3-89

Please refer to the response to the Olympic View Water and Sewer District, Comment D2-77.

Response to Comment D3-90

Please refer to the response to Comment D3-5 of this letter. The average dewatering rate during construction is now estimated at 350 gallons per minute for both the construction phase and the operations phase. In addition, groundwater impact analyses show that groundwater drawdown is expected to be less than 1 foot at the nearest CVWD well (the Woodlane well).

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"Proven construction methods and technology can mitigate most, if not all, of the impacts from dewatering at the treatment plant sites."

If 1000s of gallons per minute are pumped, it is highly unlikely there will be a realistic method to put the water back into the groundwater system. This amount of water has serious implications for the CVA water budget that may not be able to be mitigated. Long term dewatering for several years will change the basic flow of the Cross Valley aquifer and could diminish the available drawdown in the Cross Valley water District wells. At the very least, a plan to compensate the water District should be proposed and an obligation to do so recognized. The Woodlane Well is probably the most vulnerable to extensive dewatering. However, if a new aquifer discharge regime is created, water levels are likely to change throughout the aquifer in a six-year period.

D3-90

Section 4.3.1.2 Operational – High Groundwater Levels, p. 4-55, 1st Paragraph in the section

"The presence of high groundwater elevations at the treatment plant sites could result in hydrostatic uplift pressures at the base of the structure that, if not resisted by downward forces, could result in cracking of the structure and leakage."

D3-91

Though this information is presented in a way that explains the impact that groundwater conditions may have on the project, it implies an issue that is significant to the water resources. If the treatment plant will require dewatering in perpetuity, there is an inherent set of impacts that need to be evaluated. The proponent has not defined the implications that such dewatering has to the aquifer system and the groundwater resource. Likewise, the proponent has not discussed where the water pumped will be discharged or what the compatibility of the water will be with the receiving body of water. Some discussion of these aspects even if they must be speculative or merely bracket the possibilities is required before the potential for significant impacts can be assessed.

Section 4.3.1.2 Operational – Route 9 Site, p. 4-56, 1st Paragraph in the section

"BMPs [Best managements practices] should be sufficient to mitigate the potential risk of leaks from the facility to groundwater..."

D3-92

Some elaboration or a reference to show BMPs exist is needed here at a minimum. Since there is a sole source aquifer involved, it is appropriate that specific BMPs be presented and discussed so that their effectiveness can be determined. This is a poor place to depend on unsupported reference to what others have done. It is an uncomfortable place to suggest trust in unnamed technology.

D3-93

Section 4.3.2.1 Conveyance Corridors / Construction – Soils and Groundwater Contamination, p. 4-58, 2nd and 3rd Paragraph

"The construction contractor would be required to apply BMPs at all construction sites, thereby reducing the risk of spills and minimizing the effects of spills that do occur."

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Response to Comment D3-91

Please refer to the response to the Olympic View Water & Sewer District, Comment D2-79.

Response to Comment D3-92

Standard engineering design and construction techniques for leak-resistant tanks would be used for the Brightwater Treatment Plant structures. These techniques include monolithic concrete pours to the extent practical, water stops between concrete pours as applicable, concrete pads surrounding tanks for secondary containment should spills occur, pressure testing of tanks and pipelines, structure underdrains that would enable monitoring to be conducted during long-term operations, and routine maintenance. In addition, a monitoring well network is planned to monitor groundwater quality in the vicinity of the treatment plant during operations.

Response to Comment D3-93

Chapter 6 of the Final EIS provides additional detail on the requirements for minimizing the risk of spills. Specifically, a spill prevention and control plan will be required along with a stormwater pollution prevention plan (SWPPP) to guide management of construction chemicals and procedures for responding to spills, should they occur. Appendix 6-B, Geology and Groundwater, of the Final EIS, provides additional detail on potential impacts of the conveyance system on groundwater, to balance the existing discussion of potential hazardous material impacts on the project.

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This acknowledges possibility but does not assure that it will be dealt with effectively. For discussion of the project contaminating, we are offered a simple "BMPs will be required." This is followed by a full page of what will be done to deal with contamination affecting the project. The focus is that of a feasibility study not an EIS.

"Mitigation would include compliance with hazardous waste regulations and standard procedures, such as conducting environmental site assessments and hazardous material surveys prior to right-of-way acquisition or construction of pipeline segments to determine the nature and extent of contamination…"

D3-93 This is more about the impact on the project than about the project's impact on the environment. Discussion of the methods that will be used to assure no enhanced migration of such contaminants into the groundwater or surface water of the region would seem the more pertinent discussion for the DEIS. That discussion should be provided.

Section 4.3.2.1 Conveyance Corridors / Construction – Groundwater Control and Dewatering, p. 4-59, 1st Paragraph in the Section

"Modern construction and tunneling technologies could substantially reduce the volume of construction dewatering required. Some type of relatively watertight construction method (i.e. ground freezing, slurry walls, soil mixing, secant pile walls…) would be used at the portals to minimize or eliminate the need to dewater prior to and during excavation, as well as prevent the infiltration of groundwater into the finished portal and tunnel. In addition, closed face tunnel boring machines installing sealed and lined tunnel segments would preclude groundwater from leaking into the tunnel along the corridor."

D3-94 The discussion of sealing here appears to be concerned only with sealing the inside of the tunnel from the outside of the tunnel. Such thinking does not address concerns regarding the potential to create more permeable material immediately outside the tunnel structure which could drain the groundwater systems. It is essential that all disturbed materials outside the tunnel be sealed such that no avenue for preferential flow is created along the tunnel. This is equally or perhaps even more important with regard to the portals. Without such protection, the aquifers could be drained over time and significant diminishment of the regional sources could occur. These effects could impact aquifers distant from the plant and conveyance sites. The CVA could be drained in such a way that water levels in the entire aquifer are lowered. Hydrogeologic analysis of these potentials have not been accomplished. The affects of aquifer draining would also seriously change the baseflows of the streams that are currently generated by discharge from these aquifers. The proper and verified sealing of the conveyance structures is imperative to the protection of the aquifer flow and the groundwater quantity of the region. This does not seem to be fully appreciated nor adequately studied in the DEIS effort.

D3-95 **Section 4.4 Significant Unavoidable Adverse Impacts, p. 4-64**

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Response to Comment D3-94

Details on the conveyance construction approach, including standard sealing procedures between the outside of the tunnel lining and the surrounding soil, are contained in Appendices 3-B, Project Description: Conveyance, and 6-B, Geology and Groundwater, of the Final EIS. Standard tunnel construction procedures will result in the annulus space around the exterior of the tunnel being sealed with concrete grout. Please refer to the response to the Washington State Department of Ecology, Comment W5-9, for a summary of the information contained in Appendix 6-B relative to the conveyance construction and leakage analyses.

Response to Comment D3-95

As noted in several responses to prior comments in this letter, additional subsurface data gathering, geotechnical laboratory testing, geologic interpretation, and groundwater impact analyses specific to the construction and operations of the proposed Brightwater System have been conducted since the Draft EIS. This information and analyses is presented in Appendix 6-B, Geology and Groundwater, and summarized in Chapter 6 of the Final EIS. It is further summarized in the response to the Washington State Department of Ecology, Comments W5-9, for conveyance analyses, and in the response to the Olympic View Water & Sewer District, Comment D2-4, for treatment plant sites. This information indicates that no significant adverse impacts to earth and water resources are expected as a result of the construction and operations of the Brightwater System.

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"Design and construction of the Brightwater treatment, conveyance and outfall facilities will incorporate measures to avoid or minimize geologic hazards and to minimize construction and operational impacts on soil, sediment, and groundwater to the maximum extent practicable. No significant unavoidable adverse impacts to earth and groundwater resources are expected to result from construction or operation of the Brightwater Treatment Plant. "

This is an extremely broad statement for a project of this nature and size. Seems naïve to believe no significant unavoidable impacts will occur. Dewatering is very likely to be necessary by all that is written here and the aquifers involved are acknowledged to be regional water supply sources. How can the investigators involved in the Earth and Groundwater chapter realistically reach a conclusion that there will be no significant unavoidable impact. There has been no quantification of dewatering much less analysis of the hydraulic or water budget responses of the dewatered systems. The document concludes that a seismic event could sever the conveyances discussed and that the area is prone to seismic activity. The project is recognized as having the possibility of "lowering water levels in wells" and "diminishing flows at springs as a result of dewatering. It also acknowledges that continuous dewatering may be required to stabilize sites. Nothing in this chapter indicates how such impacts will be avoided save the occasional reference to the application of BMPs. This statement of no unavoidable adverse impacts is an assumption at best . D3-95

Figure 4-7
D3-96 The line type listed in the legend as "Proposed Route 9 site" does not represent that site boundary. Either the legend or the map should be changed.

CHAPTER 5: AIR
D3-97 The level of impact analysis presented in this chapter is appreciably more detailed and scientifically accomplished than that of Chapter 4. There is no information within the chapter that is pertinent to the water resources of the area or to evaluating the potential impacts to those resources.

Chapter 6 Surface Water
Chapter 6 does not adequately address the potential for dewatering to impact base flows of Little Bear or North Creeks both of which have implications to the water resource management of the CVWD service area. It fails completely to recognize potential impacts to Deer Creek which is a groundwater supported stream. Greater than 50% of Olympic View Water and Sewer District's water is collected at Deer Creek springs. The surface water context of potential groundwater impacts should be discussed in this chapter but is not.

D3-98

Several issues need to be addressed if either the Unocal Conveyance or the Route 9 site 228th street conveyance is considered.

Dewatering – Both the construction of the tunnels and the access portals require dewatering to allow construction to be completed. Analysis of the impacts to streams throughout the area of the project as a result of diminished groundwater flows to streams must be accomplished. There is no discussion of such an analysis without which the statements that impacts will either not occur or will be mitigated are just opinions.

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Response to Comment D3-96

Thank you for your comment. The map has been revised.

Response to Comment D3-97

Thank you for your comment.

Response to Comment D3-98

Appendix 6-B, Geology and Groundwater, of the Final EIS addresses potential impacts to the Deer Creek Spring and Deer Creek by the Brightwater facilities and proposed conveyance routes. Potential impacts caused by construction dewatering will be mitigated by the use of construction techniques that minimize dewatering and actual impacts to local water bodies.

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D3-99 Draining of the Aquifer – Close attention should be planned to the location and depth of the conveyance tunnels as they approach elevations of the aquifers of the area. Potentially the tunnels may penetrate the underlying confining unit thus providing a drain reducing or eliminating the productivity of the affected aquifer or the base flows of streams in the region. Lake Ballanger and the drainage it supports may be at particular risk from construction near the lake that could create a conduit that interrupts or eliminates some of the groundwater discharge that supports them. Such aspects of dewatering whether planned or unplanned must be considered as a potentially significant regional impact that the project may have on surface waters. We do not find a serious analysis of these possibilities.

D3-100 Reapplication of the water generated during dewatering is a concern. No consideration has been made to safeguard the surface water which contributes to the springs associated with Deer Creek or to assure that the Route 9 site does not change the physical or chemical nature of the Little Bear Creek low flows.

D3-101 Selection of any of the three conveyance alternatives require more data as to the final locations of dewatering projects as well as the amounts of water to be removed. It is also necessary to perform at least speculative analyses of the impacts to base flow if dewatering is applied or in a scenario where substantial leakage occurs along poorly sealed conveyance structures. The potential affects on streams and habitat from diminished base flow does not appear to have been analyzed even in a conceptual manner.

D3-102 Timing of these dewatering projects is also critical; water levels fluctuate significantly throughout the course of the year. Several dewatering alternatives may have to be considered in order to deal with the changing seasons.

Section 6.2.2.1 Treatment Plant Sites – Construction Impacts – Dewatering, p. 6-22, 2nd Paragraph

D3-103 *King County's Industrial Wastewater Program has established a maximum volume allowed for discharge to the sanitary sewer of 25,000 gallons per day (equivalent to 17 gpm or 0.04 cfs).*

The quantities discussed here are no where near those indicated elsewhere. A few gpm into sewer is hardly worth mentioning yet it constitutes most of the discussion.

D3-104 *Dewatering discharge injected into aquifer recharge wells would comply with Ecology requirements.*

Recharge Wells are sufficiently complicated to require some discussion of how they would be accomplished and why they are considered feasible in the context of this hydrogeologic setting.

D3-105 **Section 6.3.1.1 Mitigation Measures – Best Management Practices -- Dewatering**

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Response to Comment D3-99

Please refer to the response to the Olympic View Water and Sewer District, Comment D2-88.

Response to Comment D3-100

Please refer to the response to the Olympic View Water and Sewer District, Comment D2-89.

Response to Comment D3-101

Please refer to the response to the Olympic View Water and Sewer District, Comment D2-90.

Response to Comment D3-102

Please refer to the response to the Olympic View Water and Sewer District, Comment D2-91.

Response to Comment D3-103

Please refer to the response to the Olympic View Water and Sewer District, Comment D2-92.

Response to Comment D3-104

Using injection wells is no longer being considered as a means to dispose of dewatering flow. After more detailed analyses, re-infiltration, or direct discharge to Little Bear Creek after any necessary treatment, are both viable options for the anticipated dewatering flow of 350 gallons per minute during construction at the Route 9 site. Please refer to Chapter 6 of the Final EIS for greater detail on dewatering flow management.

Response to Comment D3-105

Please refer to the response to the Olympic View Water and Sewer District, Comments D2-94 and D2-95.

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There is no mention here of correcting stream base flows that will be diminished by dewatering. Even BMPs and following requirements do not eliminate this inherent impact.

Chapter 7 Plants, Animals, and Wetlands
As the name implies, the focus of this chapter is the impact of the proposed project on terrestrial and aquatic habitats. Detailed descriptions of the vegetation cover, habitat, and animals present (terrestrial and aquatic) at the Unocal and Route 9 Sites, conveyance corridors, portal siting areas, and outfall zones are provided as are descriptions of potential impacts, mitigation measures, and significant unavoidable impacts.

D3-105 The identified permanent "impacts" to habitats and wetlands are generally due to the presence of the treatment plant site or other impermeable surfaces. Depending upon the geology and location, such impermeable surfaces may have some impact on recharge to the groundwater system by decreasing infiltration of precipitation and increasing the amount of stormwater routed away from the site. While the Unocal Site and adjacent locations are "low" in the system and local recharge does not likely contribute significant volumes to the groundwater system, impermeable surface at the Rte 9 Site may have a larger impact.

D3-106 Many of the wetlands in Tables 7-2 and 7-3 list groundwater as a primary water source, suggesting the wetlands are discharge sites. However, many of these sites may, in fact, be recharge locations. Although wetland mitigation is proposed (between 1:1 and 1:1.25 mitigation ratios), the potential recharge function of the wetlands (original or man-made) is not addressed in this chapter.

D3-107 **Section 7.2.2.1 Construction Impacts—Impacts Common to Both Sites: Accidental and Incidental Discharge of Pollutants, pp. 7-55 and 7-56**
This section indicates that "incidental, incremental, or accidental discharge of pollutants, such as fuel, oil, grease, and hydraulic fluid" may occur with the use of construction equipment. The potential impacts to surface waters (streams, wetlands, etc.) and habitats are addressed (as expected given the chapter), but no discussion of potential impacts to groundwater sources are discussed. The issue raised here is not discussed in any detail in the surface water discussion (Chapter 6) or the Earth and Groundwater discussion (Chapter 4)

D3-108 **Section 7.2.2.1 Construction Impacts— Impacts Common to Both Sites: Removal and Discharge of Dewatering Water, p. 7-56, 3rd full paragraph**
"The amount of groundwater requiring removal would vary depending on the depth of the excavation, and the presence or absence of shallow unconfined aquifers, deep confined aquifers, or bedrock."

From brief review of Chapter 4 and discussion with colleagues, it would appear that the preparers of the DEIS have very limited knowledge of the subsurface geology of the area. While the above statement is true, one is left wondering whether the order-of-magnitude estimates of dewatering quantities (Chapter 4, Table 4-4) are reasonable.

D3-109 **Section 7.2.2.1 Construction Impacts— Impacts Common to Both Sites: Removal and Discharge of Dewatering Water, p. 7-56, 3rd full paragraph**

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Response to Comment D3-106

Please refer to the response to the Olympic View Water and Sewer District, Comment D2-96.

Response to Comment D3-107

Potential construction impacts to groundwater resources from chemical spills are now discussed in Appendix 6-B, Geology and Groundwater, and Chapter 4 of the Final EIS. For a summary of the construction contamination evaluation, please refer to the response to the Washington State Department of Ecology, Comment W5-43.

Response to Comment D3-108

Please refer to the response to the Olympic View Water and Sewer District, Comment D2-4, which provides a summary of the geologic interpretations at the two plant sites and the groundwater impact analyses conducted since the Draft EIS. Additional detail is provided in Appendix 6-B, Geology and Groundwater, of the Final EIS.

Response to Comment D3-109

Since the Draft EIS, and in consideration of additional subsurface information and a more detailed definition of the project, the most likely construction methods have also been refined for this Final EIS. If used, ground freezing as a means to limit groundwater flow into excavations will likely be limited to the base of portal excavations to stabilize the base while the bottom slab is being poured. Grout/soil plugs are also being considered to stabilize the base of portal excavations. These construction methods are described in Appendix 6-B, Geology and Groundwater, of the Final EIS.

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"The option of freezing groundwater to reduce the amount of dewatering will be employed where feasible."

D3-109 Given the previous comment, one wonders whether or not the DEIS preparers have sufficient information to determine whether groundwater freezing technology is feasible.

Section 7.2.2.1 Construction Impacts—Route 9 Site: Wetlands and Fish Habitat, p. 7-63, 3rd full paragraph

"Construction of the road in this area will have negligible effects on the natural habitat, except the use of pervious concrete is expected to improve the water quality of the runoff from this area."

D3-110 To my understanding, the benefit of pervious concrete is the ability to infiltrate water. During the infiltration process, the filtration benefits are realized. So the use of pervious concrete should decrease runoff and perhaps provide a water quality benefit to infiltrating water, however there is no obvious reason that one would expect runoff water quality to be appreciably improved and no explanation is offered.

Section 7.2.2.1 Construction Impacts—Route 9 Site: Wetlands and Fish Habitat, p. 7-63, 5th full paragraph

"Dewatering activities could temporarily impact stream and wetland systems on the Route 9 site and could temporarily reduce surface water flows to Little Bear Creek (Figure 7-7)."

D3-111 It is noted that dewatering impacts have an unknown potential to impact surface water bodies through the extraction of groundwater. Aside from the habitat issues discussed for this chapter, this suggests that surface water sources (not to mention GW sources) in proximity to dewatering activities may be impacted. These impacts are not given much attention in the respective chapters.

Section 7.3.1.1 Mitigation Measures Common to Both Sites, p. 7-101, 3rd bullet

- "Implement a Dewatering Plan that will be developed during pre-design after more field studies have been conducted (see Chapters 6 and 4, for more details regarding dewatering)."

D3-112 What types of studies will be performed? When will these studies be done? No real discussion of dewatering techniques, timing or magnitude is offered in either Chapter 4 or Chapter 6.

D3-113 **Section 7.3.1.1 Construction Mitigation Measures Common to Both Sites, p. 7-101, 6th bullet**

- "Ensure that tunnel boring occurs at adequate depths below surface waters to avoid or minimize the opportunity for slurry materials reaching surface waters, as described in Chapters 3 and 6."

No mention is made of the potential for slurry materials to contaminate aquifers. If flow velocities in the GW system are sufficiently low and tunneling is done at sufficient distance from production wells, this may be a minor issue. However, tunneling in proximity to production

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Response to Comment D3-110

Chapter 7 has been clarified in the Final EIS. The statement was intended to point out that with pervious pavement, more water would be infiltrated, as opposed to running off the site untreated.

Response to Comment D3-111

Since the Draft EIS, significant additional data gathering and analyses specific to potential construction dewatering effects to aquifers, domestic wells, streams, and wetlands have been conducted for the Route 9 site. The data gathering and analyses are discussed in detail in Appendix 6-B, Geology and Groundwater, with summary discussions included in Chapter 6 of the Final EIS. The analyses indicate that no adverse impacts to the adjacent stream and wetland systems are anticipated as a result of construction dewatering and the subsequent management and discharge of the removed groundwater. As noted by the appendices cited earlier in this response, groundwater removed from the shallow site aquifer would be either re-infiltrated into the aquifer or discharged to Little Bear Creek, after any necessary treatment.

Response to Comment D3-112

Please refer to the response to the Olympic View Water & Sewer District, Comment D2-100.

Response to Comment D3-113

The issue of aquifer contamination during tunneling and portal construction is discussed in detail in Chapter 6 and Appendix 6-B, Geology and Groundwater, of the Final EIS.

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D3-113 wells could disturb the formation causing sanding or other concerns. Although the distribution of material would be very different from drilling mud contaminating a formation, it is possible that the slurry material could impact production of wells in close proximity.

D3-114 **Section 7.3.2.1 Operational Mitigation Measures Common to Both Sites, p. 7-102, Final paragraph**
"The impacts of increased impervious surface within treatment plant, pump station, and portal sites would be offset by . . . using permeable materials for roads and parking areas . . . ."

I understand that permeable concrete provides some treatment/filtration to the infiltrating water, however I have never seen this effect quantified in any way. Are there any potential water quality concerns regarding infiltrated water?

D3-115 **Chapter 8 Energy and Natural Resources**

Unocal Site

Page 8-14, 5th paragraph, Line 5
"The [power] transmission line to the Unocal site may be installed underground, due to space limitations at the site and requirements imposed by the cities of Edmonds and Woodway."

Tunneling will not be limited to only inflow and outflow from the plant, but also utilities including power and gas. The impact of tunneling on groundwater resources needs to be addressed for this and other underground conveyances. Tunnels are more difficult to service than trenched conveyances in the advent of an emergency. As mentioned in previous sections tunnels can breach natural groundwater barriers, both vertical and lateral features, which would normally retard groundwater flow.

D3-116 **Chapter 9 Environmental Health**

As with Chapter 6 the Springs located at Deer Creek were omitted from discussion.

D3-117 Potential Release:

It is unlikely that the CVWD wells will be impacted by releases from the Route 9 plant. There is, however an environmental health aspect that has not been addressed. If major dewatering is required at the Route 9 site or if the construction of conveyance infrastructure inadvertently changes the nature of flow through the Cross Valley Aquifer, the current transport characteristics of the leachate from the Cathcart Landfill could be changed. The potential water budget and regional aquifer response to major changes in the flow of groundwater at the lower end of the basin should be analyzed to determine how much risk of rerouting the leachate exists. If that risk proves to be real, then contingencies should be defined before that risk is taken.

D3-118 **Chapter 10 Noise and Vibration**

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Response to Comment D3-114

Please refer to the response to the Olympic View Water & Sewer District, Comment D2-12.

Response to Comment D3-115

Unlike tunneling for the inflow and outflow from the plant, underground utilities would be installed using shallow trenching. This would involve modification of a shallow layer below the ground surface and would not substantially affect groundwater. It is rare for shallow utility trenches to have a significant effect on regional aquifers. This topic is, therefore, not discussed in the Final EIS. Please refer to the response to the Olympic View Water and Sewer District, Comment D2-104.

Response to Comment D3-116

Please refer to the response to the Olympic View Water and Sewer District, Comment D2-104.

Response to Comment D3-117

The groundwater impact analyses conducted for the Final EIS, and as summarized in the response to Comment D3-5 in this letter, and in greater detail in Appendix 6-B, Geology and Groundwater, of the Final EIS, indicate that the groundwater drawdown is expected to extend up-gradient of the Route 9 site about 3,000 feet, such that the drawdown at the Woodlane well is less than 1 foot. As the Cathcart Landfill is located further up-gradient from the Woodlane well, dewatering for construction and operation at the Route 9 site should not cause leachate from the Cathcart Landfill to be rerouted.

Response to Comment D3-118

Thank you for your comment.

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D3-118 No information in this chapter was found to be pertinent to water resources nor to have bearing on other issues raised with regard to the District's interests.

D3-119 **Chapter 11 Land Use and Shoreline**
Though we found nothing in this chapter related to the water resource interests of the District, there are matters in which the District plays a cooperative role in the community that are discussed. It is suggested that the District review this Chapter with an eye toward issues that it deals with on a community level.

D3-120 **Chapter 12 Aesthetics**
No water resource related issues are raised in this chapter. However, as with Chapter 11, there may be matters that involve the District as members of the affected community..

D3-121 **Chapter 13 Light and Glare**
No pertinent information regarding water resources is presented in this chapter.

D3-122 **Chapter 14 Recreation**
No pertinent information regarding water resources is presented in this chapter.

D3-123 **Chapter 15 Cultural Resources**
No pertinent information regarding water resources is presented in this chapter.

D3-124 **Chapter 16 Transportation**
No pertinent information regarding water resources is presented in this chapter.

D3-125 **Chapter 17 Public Services and Utilities**
The DEIS does not discuss the source of water for the Route 9 Site treatment plant. There is an indication that between 300 and 400 gallons per minute will be required to operate the facility. If it is the intention that Cross Valley Water District supply water to the facility, the ability to provide that amount of water must be assessed. Preliminary assessment by the District indicates that the additional production may be problematic in the context of projected growth. There is also a possibility that significant upgrades to the system will be required in order to deliver water at the desired rate at that point in the system. It will be necessary to analyze the systems hydraulic capability in the vicinity of the Route 9 site and the ultimate capacity of the District's sources before assurance of water availability can be given. No request has been made for such analyses.

Chapter 17 Public Services and Utilities 17.1.2.2 Route 9 Site - Public Services and Utilities, p. 17-5, Paragraph 5, Line 1
Cross Valley Water District, which draws potable water from a sole source aquifer, currently provides drinking water to over 5,400 connections in unincorporated Snohomish County. The District's supply is 10 groundwater wells drawing from the Cross Valley sole source aquifer and surface water purchased from the City of Everett."

The District is advised to verify these facts.

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Response to Comment D3-119

Thank you for your comment.

Response to Comment D3-120

Thank you for your comment.

Response to Comment D3-121

Thank you for your comment.

Response to Comment D3-122

Thank you for your comment.

Response to Comment D3-123

Thank you for your comment.

Response to Comment D3-124

Thank you for your comment.

Response to Comment D3-125

Please refer to the response to Comment D3-2 in this letter.

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17.1.2.2 Route 9 Site - Public Services and Utilities, p. 17-5, Paragraph 5, Line 1
"Properties north of Stock Pot Soup, outside of the Urban Growth Boundary (UGB), draw water from individual wells that are connected to the Cross Valley sole source aquifer. Water demand from customers at the Route 9 site from July 1, 2001 to June 30, 2002 was 0.065 cfs (29 gpm). The Cross Valley Water District does not anticipate any major water improvement projects near the Route 9 site."

D3-126

It is not clear what "major water improvement projects" implies. Are the authors implying that District water will not have to be pumped to the site for plant operations? These statements should be evaluated by District management to assure that the issues are not being ignored or misstated.

Appendix A (Glossary)
Page G-17 "Stormwater – Water that is generated by rainfall"

D3-127

This is too simplistic to be meaningful. It should be written differently to reflect that it is that component of precipitated water that is not infiltrated into the ground immediately or lost through evapotranspiration but rather runs off over the land surface and near-land-surface into stream channels.

Page G-20 "Wellhead Protection – The area of an aquifer where drinking water is pumped to users"

D3-128

This definition is incomplete. It should reflect the regulatory nature of the term, whereby the Dept. of Health requires a wellhead protection plan for Group A water systems that identifies potential contamination hazards to a wellhead. Better definitions exist within the regulations. We suggest that one of them be used.

Appendix B Construction Methods

D3-129

Summary: This chapter only cursorily addresses technical issues that need to be resolved with respect to groundwater migration, aquifer drainage and contamination through construction methods. No mitigation methods are mentioned regarding sealing hydrostratigraphic layers or disrupting migration. The groundwater contamination section only addresses contamination that is discovered by the construction process, it does not address preventing contamination during the construction process. Some of these issues are discussed in Chapter 3, but only in a cursory manner in the postscript tables.

B.2.1 Tunnel Construction, p. B-3, 3rd paragraph
"Tunneling uses a precast segmented liner that is placed behind the advancing TBM [tunnel boring machine]."

D3-130

A discussion of grouting techniques would be useful here. What measures would be taken to ensure an adequate seal is used? What techniques are proposed for such a large construction event and how will placement be guaranteed effective?

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Response to Comment D3-126

The referenced statement was based on the review of improvement projects that are identified in the *Cross Valley Water District Water Plan* (1999). It is recognized that construction of Brightwater at the Route 9 site is likely to require more extensive system improvements to Cross Valley Water District's facilities in order to provide the necessary water service and fire flows to the site. This information is included in Chapter 17 of the Final EIS.

Response to Comment D3-127

The definition of stormwater in the Final EIS Glossary has been revised. Stormwater is that portion of precipitation that does not either percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a drainage system into a defined surface water body or constructed infiltration system.

Response to Comment D3-128

Sections describing wellhead protection areas were revised to include additional detail regarding the delineation of these areas. Please refer to Appendix 6-B, Geology and Groundwater, of the Final EIS.

Response to Comment D3-129

Appendix 6-B, Geology and Groundwater, of the Final EIS has been expanded since the Draft EIS, and includes discussions of construction methods, groundwater impact analyses, and mitigation approaches. For the plant site locations, a summary of this chapter is contained in the response to the Olympic View Water & Sewer District, Comment D2-4. For a summary of the contamination potential and mitigation approaches from the treatment plant facilities to the environment, please refer to the response to the Washington State Department of Ecology, Comment W5-43.

Response to Comment D3-130

The precast segmental liner will include steel reinforcement, flexible gaskets, bolts, and pins designed to effectively support external water pressures and provide a dry tunnel. Each joint is sealed. All joints have gaskets and each joint is structurally connected during placement within and behind the tunnel boring machine (TBM). Cement grout will be placed between the segmental liner and the earth surface outside of it. The purpose of the grout is three-fold: (1) it provides a uniform confinement around the lining, (2) it forms a redundant seal outside of all the joints, and (3) it provides a linear seal that fills any voids outside the lining that eliminates any longitudinal flow along the tunnel exterior. Grout will be injected in this fashion in the area directly behind the TBM. Please refer to Appendices 3-G, Construction Approach and Schedule, and 6-B, Geology and Groundwater, of the Final EIS for additional detail.

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D3-131 **B.2.1.2 Portal Construction, p. B-4, 2nd Paragraph**
This section or any other that I have found does not mention methods of preventing groundwater leakage between stratigraphic layers. A 100 to 400 foot deep portal can rapidly drain groundwater from shallow to deeper aquifers by traveling in the voids between the structural walls of the portal and the strata. Grouting or sealing at hydrogeologic boundaries is essential to prevent discharge of shallow aquifers to deeper systems while constructing the portals.

D3-132 **B.2.1.3 Tunnel Lining, p. B-5, 2nd full paragraph**

"This liner would consist of a segmental, gasketed, and reinforced concrete liner system. This liner would be brought into the tunnel in segments to be assembled immediately after the TBM has been advanced…"

Specifications and options regarding the segmented liner that will be used in the tunneling process need to be evaluated for durability and effectiveness in protecting aquifers from waste water contamination. Is the liner capable of containing a waste spill in the event the conveyance fails?

D3-133 **B.2.3 Open Cut Construction, p. B-7**

There is no mention of groundwater migration and leakage mitigation measures for open cut construction methods. Trenching through glacial till can expose the underlying aquifer to contaminants. Runoff can infiltrate into the disturbed media of the trench and flow down the trench until it infiltrates an exposed section of the underlying aquifer. This is particularly a problem if a sewer pipe is leaking or other contaminants are flowing into the trench.

D3-134 **B.2.4 Jack and Bore, page B-10 1st Paragraph**

"When pipe installation is completed, the pits would be backfilled and returned to their original condition…"

As mentioned previously, the disturbed strata in pits, trenches and portals can create pathways for groundwater and contaminants to pass from one hydrostratigraphic layer to another. Mitigation of this potential source of aquifer drainage and contamination must be addressed.

D3-135 **B.4.1 Dewatering, p. B-14, 3rd Paragraph**

"The amount of dewatering would depend on local geotechnical conditions and the height of the groundwater table above the bottom of the open cut trench, tunnel portal or pit."

The amount of dewatering and the construction alternative used also depend on the affects pumping large volumes of water from an aquifer will have on the local water district wells. If water levels drop below pump intakes, drain the available resources or redirect groundwater flow that consumers depend on, other measures will have to be considered.

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Response to Comment D3-131

Please refer to the response to the Olympic View Water & Sewer District, Comment D2-111.

Response to Comment D3-132

Please refer to the response to the Olympic View Water & Sewer District, Comment D2-112.

Response to Comment D3-133

Please refer to the response to the Olympic View Water & Sewer District, Comment D2-113.

Response to Comment D3-134

Please refer to the response to the Olympic View Water & Sewer District, Comment D2-114.

Response to Comment D3-135

Please refer to the response to the Olympic View Water & Sewer District, Comment D2-115.

January 22, 2003

D3-135 Where will pumped water be diverted during the dewatering process? Will it be reinjected into deeper aquifers or flow as runoff down local streambeds?

D3-136 It is not possible for a reviewer of the proponent to assess the potential impact of dewatering without defining the proposed dewatering plan. Even if the conditions cannot be known precisely, an effort to bracket the probable values and analyze for the worst likely situation would allow for some real discussion of this very significant component of the project. Without some definition, any discussion of impacts or their significance is futile.

B.4.2 Contaminated Soils and Groundwater, p. B-15, 2nd Paragraph

D3-137 *"If allowable, based on flow capacity and quality limits, the dewatering flows would be diverted in to a sewer for treatment at the wastewater treatment plant. If the local wastewater system cannot accept the flow, onsite treatment of the flow would be provided before discharging."*

The volume of water generated by dewatering in the permeable aquifers of the Seattle area virtually assures that this will never happen unless the sewer district could treat the contaminated water.

D3-138 **Technical Appendices**

Earth and groundwater

This technical appendix does not provide much specific information for the area. Descriptions of materials are generic and appear to have been taken from regional maps or textbooks. Discussions of geotechnical characteristics are also too generic to be meaningful in the context of a DEIS. Groundwater discussion is simplistic and does not focus much on the vertical distribution of sediments. Since it is precisely these relationships that will dictate much of the impact potential of the conveyance routes, this is a serious short-coming.

The technical support appendix for Earth and Groundwater was expected to provide a substantial description of the geologic and hydrogeologic setting. However, it provides only a generic discussion of the glacial history and the modes of deposition responsible for the sediments of the Puget Sound Region in general. The profiles provided in figures 3, 4, and 5 in addition to being awkward without the capability to cut and splice the 5 sheets of each, provide no interpretation of the subsurface geology or the hydrogeologic implications of that geology. Without such subsurface interpretation, it is impossible for the proponent to have evaluated the probability of water quantity or water quality impacts along the conveyance routes. This section should describe as thoroughly as possible what types of materials are expected to be encountered along each route and at what depth they are expected to occur. It should also describe roughly what the water levels or potentiometric heads of the various aquifer and aquitard units are. Within the air quality analysis, modeling of potential loading and transport of contaminants was accomplished. There is no indication in this appendix or in Chapter 4 that even back-of-the-envelope analyses were performed to determine whether groundwater would be drained or contaminated with influent or effluent. We submit that the bulk of the description of the hydrogeologic systems should be provided within this appendix and referenced where necessary throughout the

Robinson & Noble, Inc.
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Response to Comment D3-136

The approaches of handling and discharging dewatering flows have been refined since the Draft EIS, and include re-infiltration through sedimentation ponds or constructed wetlands, direct discharge to receiving water bodies, or sending flows to sewer systems if necessary. Chapter 6 of the Final EIS provides a summary of the dewatering flow management approaches anticipated for the various Brightwater System components. Additional detail is provided in Appendix 6-B, Geology and Groundwater.

Response to Comment D3-137

Please refer to the response to Comment D3-136 in this letter. Dewatering flow will be treated onsite to meet surface water quality discharge standards if technically feasible and cost effective. Groundwater inflow estimates have been revised based on additional data and analysis and are much lower than previously estimated.

Response to Comment D3-138

Please refer to the responses to the Washington State Department of Ecology, Comments W5-9, W5-15 and W5-40. Additional detail is provided in Appendix 6-B, Geology and Groundwater, of the Final EIS.

January 22, 2003

document. Somewhere a comprehensive description of the groundwater, surface water and geologic systems potentially affected by the project should be presented. It seems most appropriate in this appendix.

There are, in fact inconsistencies within the various chapters with regard to the nature of the hydrogeologic systems and the dewatering that is expected to be required. A single, well interpreted description of the hydrogeologic units, their presence or absence and their functions in routing the groundwater through the region between the Route 9 site and the sea would do a great deal to add consistency and clarity to the DEIS. It is not even clear from the information presented in the appendix as it currently is whether the regional and route specific hydrogeology has been determined. Without that determination any discussion of potential impacts is premature. D3-138

D3-139 **Air**
Nothing in this appendix is pertinent to the water resource interests of the District

D3-140 **Surface Water**
This appendix provides a substantial amount of information and does a good job of supplying support documentation as to the physical and water quality aspects of the potentially affected surface water bodies.

D3-141 **Plants Animals and Wetlands**
This appendix is essentially a catalogue of species and settings without any reference to impacts or hydrology connections. As such it contains nothing that carries implications to the evaluation of water-resource issues.

D3-142 **Environmental Health**
This technical appendix does not deal with issues that relate to water resources either directly or indirectly. No comments were generated from review of this section.

D3-143 **Noise and Vibration**
No water-resource related issues were identified in review of this appendix and no comments were developed.

D3-144 **Aesthetics**
No water-resource related issues were identified in review of this appendix and no comments were developed.

D3-145 **Light and Glare**
No water-resource related issues were identified in review of this appendix and no comments were developed.

D3-146 **Recreation**

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Page 31

Response to Comment D3-139

Thank you for your comment.

Response to Comment D3-140

Thank you for your comment.

Response to Comment D3-141

Please refer to the response to the Olympic View Water & Sewer District, Comment D2-120.

Response to Comment D3-142

Thank you for your comment.

Response to Comment D3-143

Thank you for your comment.

Response to Comment D3-144

Thank you for your comment.

Response to Comment D3-145

Thank you for your comment.

Response to Comment D3-146

Thank you for your comment.

January 22, 2003

D3-146 No water-resource related issues were identified in review of this appendix and no comments were developed.

D3-147 **SUMMARY & CONCLUSIONS**

Though the DEIS document presents appreciable information describing settings and discussing the implications of those settings to the project itself, it falls short of the needed detail and analysis of potential environmental impacts and in its assessment of the project in the context of the environment within which it must be placed and ultimately function. In all too many instances, it appears as if statements concerning impacts are merely opinions inserted into an existing document. Impact analyses are not explained or even acknowledged as having been done in many cases.

To protect its water resource interests, how the impact analyses were accomplished and why specific impacts are discussed and others are not are of critical interest to the Cross Valley Water District. To accept the thoroughness of the assessment, the District needs to know more about the methods used to identify impacts and how their magnitude and significance (or insignificance) were established. Since most impacts are merely identified as existing and not discussed in relation to the investigation identifying them, their relative importance to the District or the proponent cannot be determined. The document reader is apparently expected to trust the proponent's claim to properly identify future impacts and deal with mitigation responsibly at that time. As technical reviewers charged with assessing the DEIS in terms of protecting the District's interests, we believe the document's reliance on BMPs and "following the regulations" as a method of dismissing identified impacts is unacceptable for a project of such magnitude and potential impact.

The generic nature used to describe the geology and the hydrogeology is insufficient to establish that the proponent accomplished the needed groundwater impact analysis. An adequate definition of the geologic setting is not given in the document, and surface geology is only grossly presented on a few site maps and as a trace along the top of conveyance route profiles. Likewise, an adequate definition of the hydrogeologic setting is not given in the document. Suburface geology is represented only by the logs of a few test holes along pipeline route profiles, and no interpretation of hydrostratigraphy, recharge, discharge or flow directions is given. As written, the DEIS does not afford sufficient understanding to assess groundwater resource impacts or determine how such impacts relate to surface waters. Neither does the DEIS support how the few groundwater impact statements given represent scientific conclusions.

If the District is to buy off on this project and accept the risks it carries, it must be given the opportunity to do so with all necessary information. It is our opinion that the document's failure to generate a full disclosure of impacts, its propensity to understate or disregard very real impact potential, and its offer of vague mitigation all make it unsatisfactory to the SEPA process. If the proponent truly cannot define the impacts any better than those presented in the DEIS, then perhaps additional SEPA actions should be accomplished as individual components of the project are started and once more technical information has been developed.

It appears major impact possibilities have been either ignored or glossed over, possibly for the sake of process expediency. This leaves us unable to fully advise the District of the true project

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Response to Comment D3-147

Both the Draft EIS and the Final EIS include a discussion of the probable significant adverse environmental impacts and reasonable mitigation measures associated with the proposal. The Draft EIS was issued at a time when a certain level of information was known relating to the probable significant adverse impacts of the proposal and possible methods to reasonably mitigate those impacts. Consistent with SEPA guidelines, in areas where there was uncertainty regarding the impacts, the Draft EIS presented a worst-case analysis of impacts. The Draft EIS also indicated that ongoing analysis was under way and that additional information would be forthcoming in the Final EIS. The purpose of a Final EIS is to respond to comments on the Draft EIS and, where appropriate, to provide additional or revised information and analysis relating to probable significant adverse environmental impacts of the proposal and reasonable mitigation measures. Since issuance of the Draft EIS in late 2002, considerable additional analysis has been conducted, as is the case on any large project, to further define and develop the proposal and to respond to Draft EIS comments. A number of the details that you have requested in various comments relate to either information that does not involve probable significant adverse environmental impacts or information that is important prior to issuance of actual permits, is not reasonably included in an EIS. Additional analysis that has been conducted regarding impacts to water resources is available in Chapter 6. The conclusion was reached that there would be no impacts upon water resources that could not be mitigated to nonsignificant levels.

January 22, 2003

D3-147 risks or evaluate the proponent's ability to satisfactorily mitigate against those impacts or compensate the District should an impact to its water sources or related surface water bodies occur.

D3-148 A conceptual cross section of the Cross Valley Aquifer as it relates to the Route 9 site alternative has been developed by Robinson & Noble and is presented as Figure 1 of this report of findings. Robinson & Noble recognized the need for a graphic presentation of the setting as a basis for discussion of potential impacts. Since no such graphic is presented in the DEIS, we determined that a conceptual drawing would work for the moment. It would be prudent for the proponent to develop a more rigorous analysis of the subsurface conditions that may be impacted. This analysis could be used to develop the broader concepts of impact from dewatering.

GENERAL RECOMMENDATIONS

Based upon our review of the DEIS, we make the following recommendations:

D3-149
- The lack of thoroughness in the environmental impact discussions, particularly those related to water resource impacts, requires that the District reject the DEIS as a mechanism for addressing project SEPA requirements. The District must make it clear to the proponent that the DEIS provides insufficient information with respect to the project's potential to result in significant impact to regional water resources.

D3-150
- If major dewatering is required at the Route 9 site, as apparently it is, the water budget of the Cross Valley Aquifer will be affected to some degree. Whether this constitutes a threat to the production wells cannot be determined from the information given. The District should insist that at least a hypothetical analysis of the effects of dewatering on the water levels and production capacity of the Cross Valley Aquifer be accomplished.

D3-151
- Likewise, a clearer evaluation of potential physical and chemical impacts to Little Bear and North Creeks should be required to assure that impacts to streams do not affect the District's future access to water or its general concerns about the health of the water resources in and around its service area.

D3-152
- With regard to specific District wells, an analysis of the well hydraulics relationship of any dewatering to the District's Woodlane Well is advised before accepting a given dewatering plan. Since no specifics of the dewatering necessary for this site are provided in the DEIS, we cannot speculate whether this well, which is a few thousand feet from the site, will be directly impacted by the dewatering program.

D3-153
- The District is advised to require monitoring of the Cross Valley Aquifer as much as a mile up-gradient of the Route 9 site to identify aquifer pre-construction conditions and define water level changes that occur during dewatering and construction should Route 9 be built. If perpetual dewatering is required throughout the life of the plant, monitoring should continue through plant operation. Monitoring should be described in terms of the placement and spacing of monitoring wells and the frequency of water level recording, collection, and analysis, so the District can assess the monitoring plan's adequacy.

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Response to Comment D3-148

Please refer to the response to the Washington State Department of Ecology, Comment W5-15.

Response to Comment D3-149

For the reasons set forth in the responses to D3-19 through D3-147 of this letter, King County believes that the Draft EIS and Final EIS meet the requirements for an Environmental Impact Statement as required under state law and the applicable case law interpreting the Washington State Environmental Policy Act's (SEPA) procedural requirements (the SEPA Rules WAC 197-11).

Response to Comment D3-150

Please refer to the responses to the Washington State Department of Ecology, Comments W5-9, W5-15 and W5-40. Additional detail is provided in Appendix 6-B, Geology and Groundwater, of the Final EIS.

Response to Comment D3-151

Potential physical and chemical impacts to Little Bear Creek from construction and operation are discussed in greater detail in Chapter 6 of the Final EIS.

Response to Comment D3-152

Please refer to the responses to the Washington State Department of Ecology, Comments W5-9, W5-15 and W5-40. Additional detail is provided in Appendix 6-B, Geology and Groundwater.

Response to Comment D3-153

Please refer to the response to the Washington State Department of Ecology, Comment W5-15.

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D3-153 Monitoring efforts should be started as soon as possible. The longest possible base-line record will be required to define normal water-level and perhaps water-quality fluctuations significant to the project and to understanding the impacts on water resources.

D3-154 ▪ If the District does not receive satisfactory information detailing Cross Valley Aquifer protection methods and verification, it should challenge any construction that has the potential to impact its aquifer. This challenge should include a search for any Federal funding (direct or indirect) that might violate the protections afforded by the Sole Source Aquifer designation.

This document has been prepared by or under the direction of F. Michael Krautkramer, a licensed hydrogeologist in the State of Washington (#643). The original hardcopy of the document carries the appropriate professional stamp.

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Response to Comment D3-154

Thank you for your comment.

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D4
LAKE FOREST PARK WATER DISTRICT—PUBLIC HEARING COMMENTS

FINAL
ENVIRONMENTAL
IMPACT STATEMENT

Brightwater
Regional Wastewater
Treatment System

COMMENTS AND RESPONSES

13

TESTIMONY OF JOAN GRINDELAND

My name is Joan Grindeland, and I work for Lake Forest Park Water District. The district is located at the north end of Lake Washington in King County, established in 1948 when it was purchased from the Forest Park Water Company.

Our district is comprised of three deep and eight functioning artesian wells located within our designated wellhead protection area at NE 187th Place and 49th Place NE. We have water rights to pump a million gallons a day and have been serving portions of Lake Forest Park continuously and without treatment since 1948.

The District applauds King County for their foresight and planning for the future in this arena, and we fully support the decision to construct the Brightwater system. Our concern with the draft Environmental Impact Statement is that it fails to consider our designated wellhead protection area and sole source aquifer. D4-1

Extensive geotechnical bore drillings have been done to the north on the 228th alternative route; however, no drillings have been done in close proximity to our wellhead protection area and aquifer on 195th, which is the preferred route. D4-2

VAN PELT, CORBETT & ASSOCIATES (206) 682-9339

Response to Comment D4-1

Please refer to the response to the City of Lake Forest Park, Comment C4-8.

Response to Comment D4-2

Please refer to the response to the City of Lake Forest Park, Comment C4-8.

The District appreciates King County's repeated assurances that our aquifer will be protected; however, no test bores are planned until after the draft EIS process is completed, and there have been no guarantees that the results of these borings will be included in the final EIS.

We know there is an aquifer and that King County proposes to position the tunnel through that aquifer and the ten-year recharge zone for our wellhead protection area. Would it not make sense to do the bore drillings now during the draft process to determine the potential impact on the aquifer? To site the tunnel prior to reviewing site-specific information could not only be costly but time-consuming should it be discovered that the site is not appropriate, as it does indeed run through our Lake Forest aquifer. D4-2

We have been requesting the studies and bore holes be drilled and the information be presented during the draft process and comment period since early June, to no avail. We are now requesting that the deadline for comments on the draft Environmental Impact Statement be extended to include this pertinent geotechnical information. D4-3

Thank you.

Response to Comment D4-3

Additional geotechnical and groundwater information is provided in Chapters 4 and 6, and Appendix 6-B, Geology and Groundwater, of the Final EIS.

D5
LAKE FOREST PARK WATER DISTRICT—PUBLIC HEARING COMMENTS

FINAL
ENVIRONMENTAL
IMPACT STATEMENT

Brightwater
Regional Wastewater
Treatment System

COMMENTS AND RESPONSES

10

TESTIMONY OF DAN MUNDALL

I'm Dan Mundall. I'm a registered civil engineer. I'm on behalf of Lake Forest Park Water District, also known as King County Water District 83.

First, I would like to commend King County for implementing a regional plan to sustain regional growth and protect the developing urban environment of the north county. Continued growth will inevitably require improved liquid waste infrastructure.

Second, I would like to state that Lake Forest Park Water District has exercised significant effort in requesting the county of King to properly assess the tunnel design to preclude damage to their sole source of water, a series of deep wells and artesian wells near the proposed pipeline. D5-1

The District is requesting independent, technical, and legal assurances from King County that there will not be a short-term or long-term impact on the productivity or quality of the district's pristine water source.

As all man-made structures are prone to fail and may be subject to earthquakes, corrosion, settlement and the like, the District is asked that evidence of a natural barrier between their aquifer and the proposed tunnel must be shown to exist. The District believes D5-2

VAN PELT, CORBETT & ASSOCIATES (206) 682-9339

Response to Comment D5-1

King County is committed to designing and constructing a tunnel that does not have an adverse short- or long-term impact on the productivity or quality of the Lake Forest Water District's water source. Considerable effort is being expended and will continue to be expended to ensure that sufficient information is available to make proper design decisions about how best to protect this important resource.

Response to Comment D5-2

A robust tunnel design would be implemented, including a considerable effort to ensure a design that is protective of the aquifer. One of the ways to protect the aquifer is to take advantage of naturally occurring, low-permeability subsurface materials, and this would be a factor in the design effort. In addition, King County would integrate the Brightwater conveyance system facilities into its long-term, ongoing asset management program, which includes routine inspection and maintenance procedures.

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D5-2 this is only wise engineering practice.

Third, I am perplexed by Brightwater project manager Christie True's statement that even if we were one of the sole source aquifer or going right through it, we can make sure that there is no risk to the drinking water. I have examples of tunnel lining leakage failures, failures even during the initial acceptance, saying nothing of long-term leakage.

Furthermore, other types of impact on the

D5-3 district's aquifer have not been addressed, including parallel migration of water to and from the district's aquifer and to and from adjacent strata along the tunnel core.

Also, hydraulic obstruction of water in the aquifer if directly penetrated by the tunnel. Also, construction-related affects. Also, contamination and water migration from test boring holes. Also, contamination and water migration from tunnel portals.

D5-4 Fourth, I want to emphasize to King County officials and to concerned residents here, the immense responsibility carried by King County, as they are both player and referee in this project. Under state law, King County can act as both proponent and lead review agency of their projects. To all consultants, elected and appointed officials, I admonish Stanford principal

VAN PELT, CORBETT & ASSOCIATES (206) 682-9339

Response to Comment D5-3

Please refer to the response to the City of Lake Forest Park, Comment C4-8.

Response to Comment D5-4

Thank you for your comment.

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D5-4 not for expediency or job security.

Thank you.

VAN PELT, CORBETT & ASSOCIATES (206) 682-9339

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D1
LAKE FOREST PARK WATER DISTRICT—WRITTEN COMMENTS

FINAL
ENVIRONMENTAL
IMPACT STATEMENT

Brightwater
Regional Wastewater
Treatment System

COMMENTS AND RESPONSES

12/18/02 WED 13:43 FAX 2062960194 KC EXEC OFFICE 001

RECEIVED
DEC 27 2002
ENVIRONMENTAL PLANNING DIVISION

LAKE FOREST PARK WATER DISTRICT

GOOD WATER. NATURALLY

Commissioners:
William Currie
Timothy M. Davis
Gordon Hungar

(206) 365-3211
FAX: 365-3357
4029 N.E. 178th St.
Lake Forest Park
WA 98155

#1202-047
DEC 18 2002
RECEIVED
KING COUNTY EXECUTIVE OFFICE
TO: DNRP
DUE DATE: 01-01-2003
AUTHOR: HUNGAR G
SUBJECT: Brightwater
ACTION
X RESPONSE FOR EXEC. SIG.
RESPOND FOR EXECUTIVE
REVIEWED BY
F.Y.I

Fax Direct to Christie Crue #174

December 17, 2002

Honorable Ron Sims
King County Executive
King County Courthouse
516 Third Avenue
Seattle, WA 98104

Re: Brightwater Environmental Review Process

Dear Executive Sims:

D1-1 Lake Forrest Park Water District is formally requesting King County to delay the deadline for comments on the Brightwater DEIS so that bore drilling information which will specifically analyze impacts to our aquifer and Well Head Protection Area (WHPA) can be included in the comment process. The aquifer is the sole source of drinking water to the District's customers. The finalization of the Brightwater DEIS will inevitably lead to the selection of a large east-west tunnel. To site the tunnel prior to obtaining and analyzing site-specific information will be costly and time-consuming should the site not prove acceptable.

It is of the utmost importance for King County to commit itself to examine the possible impacts of the proposed tunnel at an early stage of the review process. In all our meetings and correspondence with King County to date, beginning in June, 2002, we have emphasized that we do not yet know the range of potential impacts on our aquifer and WHPA and a specialized, independent hydrogeological review is necessary.

Recently the technical staff of King County has informed the District that there will be geo-technical bore drillings performed on the area in the WHPA; however these are not scheduled until January 2003, at the earliest. The results of the drillings will not be known until well after the deadline for comments on the DEIS. No one has guaranteed the District that the results or analysis of the drilling will be published in the Final EIS.

Response to Comment D1-1

Thank you for your comment. King County recognizes its responsibilities as lead agency under SEPA and as the project proponent for Brightwater.

12/18/02 WED 13:43 FAX 2062960194 KC EXEC OFFICE 002

Ron Sims Page -2-

D1-1 King County is acting as both project proponent and Lead Agency for the SEPA process. This dual responsibility places your agency under increased scrutiny. It is incumbent on you to ensure that King County is not placed in a position of compromise by failing to properly recognize important environmental impacts.

Sincerely yours,

Gordon Hungar
President, Board of Commissioners

CC: Richard Jonson, Attorney
Dan Mundall, Engineer
Christine True, King County
Gunars Sreibers, King County
Michael Popiwny, King County
David Hutchinson, Mayor of Lake Forest Park

D6
LAKE FOREST PARK WATER DISTRICT—WRITTEN COMMENTS

FINAL
ENVIRONMENTAL
IMPACT STATEMENT

Brightwater
Regional Wastewater
Treatment System

COMMENTS AND RESPONSES

LAKE FOREST PARK WATER DISTRICT

Commissioners:
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4029 N.E. 178th St.
Lake Forest Park
WA 98155

GOOD WATER, NATURALLY

RECEIVED
FEB 5 2003
ENVIRONMENTAL PLANNING DIVISION

February 4, 2003

Don Theiler, Manager
King County Waste Water Treatment Division
King Street Center: KSC-NR-05-05
201 South Jackson
Seattle, WA 98104-3855

Dear Mr. Theiler:

D6-1 The Lake Forest Park Water District (District) is submitting this letter and attachments as our comments to the Brightwater Regional Wastewater Treatment System Draft Environmental Impact Statement (DEIS). Thank you for the extension on comments until February 5, 2003. While we appreciate the extension, it falls short of what the District had originally requested. We requested an extension of the DEIS comment deadline so that technical data relative to impacts on the District's sole source aquifer from the proposed effluent line along Route 9 – 195th Street could be developed and reviewed as part of the SEPA review process..

As always, the District wishes to applaud the County's foresight in ensuring adequate sewer and wastewater facilities for the future in both Snohomish and King County. While we do not wish to obstruct this process we do consider it imperative to have potential impacts considered in the environmental review in accordance with Washington State law. Following are several related observations which we wish to summarize for your review:

D6-2 1. The DEIS is vague, without specifics in the areas of testing, design and operation of the 195th Street effluent line. It is impossible for the District to comment on the specifics of the DEIS in relationship to how the line will impact our District, our sole source aquifer and Well Head Protection Area (WHPA) as these are not even included in the DEIS analysis. To ignore the impact of this multi-billion dollar project on an established community water source makes light of the intent and purpose of SEPA.

Response to Comment D6-1

The Lake Forest Park Water District was one of 23 agencies, organizations, and individuals who received an extension of the comment period upon request. After the publication of the Draft EIS, King County conducted additional studies of the aquifers in the Brightwater project area. Please refer to the revised discussion of impacts in the Final EIS, Chapter 6 and Appendix 6-B, Geology and Groundwater.

Response to Comment D6-2

Please refer to the response to the City of Lake Forest Park, Comment C4-8.

Don Theiler 02/04/2003 Page –2-

D6-3 2. We question why the 195th Street route is selected over 228th Street route. The route on 228th Street is a relatively low density corridor compared with 195th Street, which is high density residential with little or no open space or vacant lots.

D6-4 3. The District takes exception to not being listed as an Affected Agency in the DEIS. The Route 9--195th Street effluent pipeline runs though our sole source aquifer and within the 10-year recharge area for our established WHPA.

D6-5 4. The center of the 72 acre Portal 10 circle is located in a residential zone adjacent to our District administrative office and yard. A nearby park has been repeatedly suggested to the County as a potential portal location. The rationale for the preliminary siting area of portal 10 is questioned.

D6-6 D6-7 D6-8 5. The area of the DEIS that is of the most concern to the District is the location of the preferred alternative Route 9 – 195th effluent line. No well borings have been done on the Route 9--195th Street route, while some test borings were done on the Route 9—228th Street route. The District has attempted, since June 2002, to get the County to acknowledge the absence of hydrogeologic data on the preferred alternative Route 9 – 195th Street. We have repeatedly requested engineering data be provided and hydrogeologic testing be done PRIOR to siting of the proposed high pressure effluent tunnel in the vicinity of the aquifer. In addition, we have requested a delay in the DEIS to incorporate these data. Copies of correspondence describing these requests are attached for inclusion with our comments. The County has told us that it is now in the preliminary steps of performing well borings and hydrogeological testing in the vicinity of our aquifer. However, there has not been any agreement with the District on what the acceptable parameters will be for these tests.

D6-9 We reiterate that the District believes it is not only presumptuous to site this project based on a political decision rather than engineering facts, but it could be extremely costly to do so prior to determining how the tunnel could impact the community water supply of Lake Forest Park.

D6-10 The District is meeting with representatives of King County on February 10, 2003 to discuss an engineering and legal framework for work done adjacent to the District's aquifer. The District maintains the right to approve or disapprove of any work that is to be done in our WHPA or in the vicinity of the District's aquifer. To this end the District insists that an independent hydrogeological specialist review the proposed design of the 195th Street line, beginning with the scope and design of the well borings through the final impact analysis on our aquifer. Questions that should be answered in this process include:

Response to Comment D6-3

Both the Route 9-195th and Route 9-228th Street corridors are being evaluated and screened using a number of engineering, community, environmental, and land acquisition criteria. The 195th and 228th Street corridors were the two Route 9 site conveyance corridors that were selected during the Draft EIS screening. They are both being further evaluated as part of the Final EIS. The proposed conveyance facilities are predominantly underground tunnels that can largely pass under public right-of-way even in more densely occupied residential areas. The open/available space within the portal siting areas, along either the 195th or 228th Street alignments, is a consideration in the final route selection in the Final EIS.

Response to Comment D6-4

The Draft EIS did not include a list of affected agencies because all agencies that will be affected will not be known until final project design and permit submittal. The Lake Forest Park Water District was mistakenly listed as the Lake Forest Park Water and Sewer District on the Distribution List in Appendix A of the Draft EIS. The reference has been corrected. The Lake Forest Park Water District is listed on the Distribution List in the Final EIS and will receive a copy of the Final EIS. The City of Lake Forest Park is listed as a King County wastewater customer in Chapter 2 of the Draft and Final EIS because it is the City, not the Water District that provides service to wastewater customers.

In addition, the Water District was discussed in appropriate sections of the Draft EIS; refer to Section 4.1.4.5, Groundwater, and Table 4-4, for example. The Water District is also discussed in appropriate sections of the Final EIS, particularly in sections that discuss aquifers and wellhead protection areas.

Response to Comment D6-5

In response to a number of citizen and local agency comments and a re-evaluation of the configuration of Brightwater System influent conveyance facilities, Portal Siting Area 10 has been eliminated from the Route 9 project description and is a secondary portal in the Unocal project description in the Final EIS.

Response to Comment D6-6

Please refer to the response to the City of Lake Forest Park, Comment C4-8.

Response to Comment D6-7

King County is committed to sharing with interested parties all geology and groundwater data that are collected for the Brightwater System. King County believes that the information included in this Final EIS is sufficient to evaluate the potential impacts and mitigation approaches for the project.

Response to Comment D6-8

King County acknowledges that communications with Lake Forest Park Water District were limited prior to publication of the Draft EIS. Since that time, King County has made a concerted effort to meet with and obtain input from the District on hydrogeologic testing and exploration and intends to continue to do so throughout the remainder of the process.

Response to Comment D6-9

The Executive's decision is based on a number of factors including the findings in the Final EIS, as well as additional technical, community, and cost considerations. A full description of the siting process is available on CD upon request or the summary can be found in Chapter 2 of the Final EIS.

Response to Comment D6-10

The Draft EIS included expert evaluation of hydrogeological issues associated with the Route 9-195th Street System. The Final EIS provides additional technical analysis of this issue. Moreover, King County has provided many jurisdictions with funding to conduct, if they wish, independent expert review of any issue included in the EIS.

Don Theiler 02/04/2003 Page –3-

D6-11
- What is the probability of leakage of the tunnel liner and portals, whether from groundwater seeping in or effluent seeping out?
- What are the impacts of short term and long term leakage of the tunnel liner and portals?

D6-12
- What is the impact to the District aquifer of having a large tunnel run right through it?
- What will be the impact resulting from seismic events on the pre-cast liner concrete and joints?
- Delineate design improvements in the proposed tunnel relative to other tunnel projects having known failure including:

D6-13
  - Bi-County East and West Water Tunnel, Washington Suburban Sanitary Commission
  - Washington Metro Subway Tunnel, Washington Metropolitan Area Transit Authority
  - Boston Water and Sewer Commission, Metropolitan District Commission, Massachusetts Water Resources Authority, Massachusetts Bay Transportation Authority tunnels
  - Valerenga – Stalsberg airport rail tunnel, Norway (1992)

D6-14 Thank you for attention to these items. We look forward to working with King County to adequately resolve these and other previously sited problems and concerns. Notwithstanding the fact that the District desires to seek an amicable resolution of the issues raised in this and previous letters concerning the proposed 195th Street line, the District does not waive any legal rights that it may have to challenge the adequacy of the SEPA process for Brightwater or to protect its water rights.

Sincerely,

Gordon E. Hungar

Gordon E. Hungar, Chairman
Board of Commissioners, Lake Forest Park Water District

Enc.

Cc: Commissioners, Lake Forest Park Water District
Richard Jonson, Attorney
Daniel Mundall, Engineer
David Hutchinson, Mayor, City of Lake Forest Park
Carolyn Edwards, King County Council
Christine True, King County

Response to Comment D6-11

Based upon the known ground conditions and the portal and tunnel designs, it is estimated that the seepage, both in and out of the system, will be minimal. Please refer to Final EIS Appendix 6-B, Geology and Groundwater, for more discussion regarding infiltration and exfiltration.

Response to Comment D6-12

Please refer to the responses to the City of Lake Forest Park, Comment C4-8, and Olympic View Water & Sewer District, Comment D2-67. For additional details, please refer to the Final EIS Appendix 6-B, Geology and Groundwater.

Response to Comment D6-13

Bi-County East and West Water Tunnel - 1979: The tunnels had leakage problems because the rock structure did not behave as predicted by the designers. The tunnels did not utilize pre-cast bolted and gasketed segments grouted in place. Brightwater tunnels will have such a segmented lining system to provide more uniform and greater levels of sealing than was unavailable in 1979. A secondary liner may be added in some areas to add an additional level of protection redundancy.

Washington (D.C.) Metro Subway Tunnel - 1975–2001: The cause of the problem in the earliest tunnels was primarily due to the leakage through cast-in-place concrete in ground conditions that now are considered inappropriate. Washington Metro has subsequently switched to designs that principally used bolted and gasketed segmental liners to control groundwater seepage. Bolted and gasketed segmental liners will also be used in Brightwater. With this change and advancements in grouting technologies, the newest Washington Metro tunnels have been noted for being completely dry.

Central Artery/Tunnel: The comment refers to four different Boston area agencies, one of which (Metropolitan District

Commission) no longer exists. The Massachusetts Water Resources Authority has constructed some of the oldest subway tunnels in the country. None of the agencies has an “industry-recognized” failure associated with the operation of their respective tunnels.

Romeriksporten (rail tunnel from Oslo to Stalsberg): The principal reason for damage caused by the construction of the Romeriksporten was due to the insufficient geotechnical investigation prior to construction. Unlike the United States, Norway at the time did not require a preliminary environmental assessment before permitting and construction. The tunnel crossed a 10-kilometer (6-mile) area of unstable rock faults with multiple rock shears and fissures before the geotechnical conditions were recognized. King County has conducted and continues to conduct geotechnical investigations to design tunnel alignments that avoid high-risk environments. In addition, the geotechnical information would be used to properly design the tunnel to prevent the leakage encountered at Romeriksporten.

Response to Comment D6-14

Thank you for your comment.

LAKE FOREST PARK
WATER DISTRICT

GOOD WATER, NATURALLY

Commissioners:
William Currie
Timothy M. Davis
Gordon Hungar

(206) 365-3211
FAX: 365-3357
4029 N.E. 178th St.
Lake Forest Park
WA 98155

June 21, 2002

Environmental Planning
King County Waste Water Treatment Division
Mailstop KSC-NR-0505
201 South Jackson
Seattle, WA 98104-3855

Dear Sir or Madam:

D6-15 The Lake Forest Park Water District (formerly King County Water District #83) wishes to inform you of our concerns relating to the Brightwater Project planning for sewer lines in Bothell Way (State Route 522) and Ballinger Way (State Route 104) in the City of Lake Forest Park. In particular, we have questions regarding potential damage to the aquifer that could occur with tunneling, as this aquifer is the water source for the district.

Our water district has a self-sufficient water supply with a 12-acre watershed located approximately 1600 feet north of Ballinger Way. Four deep wells, up to 300 feet deep, and nine artesian wells provide a unique water supply to 3,000 citizens of Lake Forest Park. This source of water has been in use for over 85 years and as a Public Utility District for the past 50 years. A map of the water district is enclosed.

The wells have the capability of producing 1,000,000 gallons daily, although our average draw is much less. We have records showing well levels, drawdowns, usage, etc., and know that this has been a stable water source for our district.

If this major construction project resulted in changes in the aquifer supplying our watershed, reducing the amount of water available, it would be very difficult from both a financial and an engineering standpoint to provide alternate sources of water for our customers. We therefore request that your studies specifically address this potential problem and inform us of the consequences of both open cut and tunneling procedures.

Response to Comment D6-15

King County is aware of the importance of the aquifer supporting the Lake Forest Park Water District Wellfield and is committed to protecting this resource. Consequently, studies have been and continue to be undertaken to support a project design that is protective of groundwater quality and quantity. Please refer to the response to the City of Lake Forest Park, Comment C4-8, for specific details on King County actions in this regard.

Brightwater Project Page –2-

D6-16 A second concern is the size and depth of this project. The District is concerned about the effect that the project would have on the maintenance of our existing plant and installation of new facilities. For example, would this require special permitting to replace or repair existing mains located in Ballinger Way? If so, what would the permitting process entail?

D6-17 We also wish to point out the need for mitigation of any damage to the aquifer, and we would like to hear from you on how this would be resolved.

Sincerely,

Gordon E. Hungar, Chairman
Board of Commissioners, Lake Forest Park Water District

Enc.

Response to Comment D6-16

The installation of a tunnel, portal, or other component of the Brightwater System would not alter the way municipalities review permit applications for the maintenance or installation of new utilities in public right-of-ways. The presence of a tunnel or any other utility within a right-of-way will not impact the Water District's ability to install or maintain its infrastructure so long as proper separations are maintained.

Response to Comment D6-17

King County has been discussing and will continue to discuss with the Lake Forest Park Water District the issue of mitigation needs.

MICHAEL A. JONSON
RICHARD E. JONSON

LAW OFFICES OF
JONSON & JONSON, P.S.
701 FIFTH AVENUE, SUITE 7121
SEATTLE, WASHINGTON 98104-7016
FAX: (206) 626-0349
E-MAIL: richard@jonson-jonson.com
(206) 624-2521

RETIRED
CARL A. JONSON

September 25, 2002

Environmental Planning
King County Waste Water Treatment Division
Mailstop KSC-NR-0505
201 S. Jackson
Seattle, WA 98104-3855

Re: Lake Forest Park Water District

Dear Sir or Madam:

D6-18 This firm is counsel to the Lake Forest Park Water District. The District provides water service to approximately 3,000 residents of the City of Lake Forest Park through a system of wells located on a twelve acre District owned watershed. Four wells drilled to an approximate depth of 300 feet and nine artesian wells are located in the watershed. The water supply was originally developed in the early 1900's and has been improved and upgraded over the years. The watershed and the aquifer beneath produce a pristine, untreated and irreplaceable supply of water.

The District's Board of Commissioners is very concerned that the proposed tunnel for the Brightwater Treatment Plant outfall line will damage the District's aquifer. The tunnel will be adjacent to the watershed at the approximate depth of the aquifer. The aquifer must be protected from damage by the proposed tunneling.

D6-19 The Board requests that King County pay for the cost of an analysis of the aquifer, to be completed before tunneling occurs, in order that its depth, width and operational characteristics are fully understood and so that measures to protect the aquifer can be implemented at the outset. The Board requires written assurance from the County that the tunneling will not damage the aquifer or otherwise interfere with the District's well system. If the County cannot grant such assurance, then the tunnel should be reconfigured to avoid the aquifer.

D6-20 Any damage, interruption or interference with the District's system of wells is a crime against the Water Code as provided in RCW 90.03.400 et seq (applicable to ground water pursuant to RCW 90.44.020). In addition, RCW 90.54.140 provides an express direction to all jurisdictions to protect the quality of ground water aquifers which are a sole drinking water source.

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Response to Comment D6-18

King County is also committed to protecting the aquifer from any damage associated with tunneling. Please refer to the response to the City of Lake Forest Park, Comment C4-8, for specific information on King County's actions in this regard.

Response to Comment D6-19

Please refer to the response to the Lake Forest Park Water District, Comment D6-10.

Response to Comment D6-20

Thank you for your comment.

Environmental Planning

09/25/02
Page 2

D6-21 In conclusion, King County has an affirmative duty to protect the District's water supply. Given the irreplaceable nature of this supply, it will not suffice to simply arrange for a back-up supply from an adjacent water purveyor in the event that the supply is damaged.

Please contact me with King County's response to the requests set forth above.

Very truly yours,

JONSON & JONSON, P.S.

Richard E. Jonson

REJ:dj

cc: Lake Forest Park Water District
Dan Mundall, Engineer

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Response to Comment D6-21

Chapter 6 of the Final EIS contains a discussion of the probable significant adverse environmental impacts of the proposal on water supply and reasonable mitigation measures to address probable significant adverse impacts. No impacts to these water resources, that would not be mitigated to a nonsignificant level, were identified.

LAKE FOREST PARK
WATER DISTRICT

GOOD WATER, NATURALLY

Commissioners:
William Currie
Timothy M. Davis
Gordon Hungar

(206) 365-3211
FAX: 365-3357
4029 N.E. 178th St.
Lake Forest Park
WA 98155

October 30, 2002

Michael Popiwny
Siting and Mitigation Manager
Wastewater Treatment Division
Mailstop KSC-NR-0503
201 South Jackson
Seattle, WA 98104-3855

Dear Mr. Popiwny:

D6-22 The District has received the draft agreement for Brightwater EIS review which you promised in your phone conversation of October 16, 2002. The information has been reviewed by the Board of Commissioners as well as the District engineer. They have asked me to respond to your request.

The District appreciates your offer to assist with the cost of reviewing the draft EIS and would be willing to discuss the content of this agreement when appropriate. There are, however, some outstanding concerns that need to be addressed prior to that discussion.

D6-23 The District is required by law to protect our established water source and we are concerned about the lack of technical data showing that the Brightwater conveyance pipes proposed on the N.E. 195th route will not adversely impact our Well Head Protection Area (WHPA), aquifer, and wells.

At the present time there appears to have been only minimal geo-technical survey work performed on the 195th Street route, which traverses the District's WHPA and aquifer. Bob Peterson met with us on October 22, 2002, and made a presentation on the project. The data he presented shows that there are no exploratory wells drilled, and there is very little geo-technical data collected to date.

Response to Comment D6-22

Thank you for your comment.

Response to Comment D6-23

King County recognizes that the portions of the Route 9-195th Street System alternative did not have the same level of field explorations as some other areas along the other alternatives. That is why King County has conducted additional geotechnical investigations to further evaluate the potential for risks to groundwater along the system alternatives. The investigations have included both field explorations and review of geotechnical data of previous well projects. These data are included in the Final EIS.

Michael Popiwny Page –2-

The current well sites, drilled along the Route 9 corridor, are not close enough to our wells and aquifer, and the data presented to the District to date does not sufficiently analyze the potential impact nor adequately identify the sub strata of the area in question. The new route is actually up-gradient from our wells and the potential for adverse impact to our aquifer cannot be ascertained without evidence which characterizes the geological and hydrological properties of the area and demonstrates that the proposed tunnel will not impact the quality or productivity of our water source.

D6-23 We look forward to having this data prepared in a timely manner so that the District is able to make informed and appropriate decisions regarding these issues.

D6-24 As specified in our attorney Richard Jonson's letter of September 25, 2002, the District will also require written assurance from King County that there will not be any near or long term damage, interruption or interference with the District's system of wells and aquifer. The assurance will also need to cover contingencies.

The District supports King County in their effort to create regional wastewater infrastructure to protect the environment and allow for orderly development in the region. The District also has an implied and legal responsibility to ensure the long term quality and productivity of our natural water source.

D6-25 In reviewing our files, I find that this correspondence is the sixth effort made to resolve this issue by our District and the City of Lake Forest Park, which echoes essentially the same request. I have summarized these contacts below for reference:

- June 21, 2002: Letter addressed to Environmental Planning, King County Wastewater Treatment Division requesting potential impacts to District aquifer be assessed.
- June 25, 2002: Letter from City of Lake Forest Park to Environmental Planning, King County Wastewater Division which includes reference to the protection of the aquifer which serves much of the City of Lake Forest Park.
- September 13, 2002: Meeting with King County staff and their consultants and the City of Lake Forest Park where our engineer specifically delineated the same requests made in this letter; that technical and legal guarantees be made which will ensure protection of the District's water source.
- September 25, 2002: Letter from our attorney requesting that King County pay for the necessary hydro-geological study and requesting written guarantees that Brighwater will not impact the District's water source.
- October 22, 2002: Meeting with King County Project Manager Bob Peterson and King County consultant HWA at the District's office where our engineer reiterated the same requests of previous correspondence.

Response to Comment D6-24

Chapter 6 of the Final EIS analyzes in greater detail the likelihood of impacts to Lake Forest Park Water District's system of wells and aquifers.

Response to Comment D6-25

Please refer to response to Comments D6-10 in this letter. Comments related to requested assurances go beyond the scope of the EIS and should be addressed directly to the appropriate King County decision makers.

Michael Popiwny

Page –3-

While we support your administration in this important project, we also know that there is no substitute for sound technical work, independent review and written guarantees when there is risk involved.

D6-25

We look forward to further discussions with you toward achieving the above mentioned goals.

Sincerely,

Gordon E. Hungar
President, Board of Commissioners

Cc: Board of Commissioners, Lake Forest Park Water District
Richard Jonson, Attorney
Dan Mundall, Engineer
Bob Peterson, King County
DOH Well head protection planning
EPA
Ron Sims, King County Executive
Mayor Hutchinson, City of Lake Forest Park

GOOD WATER, NATURALLY

December 2, 2002

Christine J. True, Manager
Major Capital Improvement Program
King County Wastewater Treatment Division
201 South Jackson Street
Seattle, WA 98104-3855

Dear Ms. True:

D6-26 Thank your for your response to the District letters of September 25, 2002, and October 30, 2002. The District appreciates your stated goal of protecting our sole source aquifer. We have not applied for the sole source aquifer designation to the EPA, however, we use this term because the aquifer is our only potable source of supply. By the same token the District is supportive of King County's Bright Water project, as long as we are provided with technical and legal assurance with contingencies to ensure that this project will not adversely impact the quality or productivity of our sole source aquifer. This request has been stated in all of our previous correspondence and meetings and has yet to be addressed.

D6-27 The District considers it of the utmost importance for King County to commit itself to examine the possible impacts of the proposed tunnel at an early stage of the review process. In all our meetings and correspondence to date, we have emphasized that we do not yet know the range of potential impacts on our sole source aquifer and that this would require a specialized, independent hydrogeological review. Some potential impacts have been mentioned previously but are in no way to be construed as a comprehensive list of the Districts concerns. Several of the concerns mentioned to date include:

- Parallel migration of water to and from the District's aquifer to and from the adjacent strata along the tunnel bore.
- Leakage into the propose tunnel casing from the District's aquifer.
- Leakage out of the proposed tunnel casing into the District's aquifer.
- Hydraulic obstruction of water in the aquifer if directly penetrated by the tunnel.
- Construction related effects.
- Contamination and water migration from test boring holes.
- Contamination and water migration from the tunnel portals.

Response to Comment D6-26

King County is committed to protecting Lake Forest Park's water supply during construction and operation of the Brightwater System. Detailed technical evaluations supporting King County's commitment to protect this water resource are summarized in Appendix 6-B, Geology and Groundwater, of the Final EIS.

Response to Comment D6-27

Please refer to the response to the City of Lake Forest Park, Comment C4-8, regarding the issues addressed in this comment, except for one pertaining to "test boring holes." With regard to the concern about contamination associated with test borings, all wells and borings being drilled for the geotechnical exploration program are being constructed in accordance with governing Washington State Department of Ecology regulations, which are designed to protect groundwater quality and prevent migration.

Christine True

Page –2-

D6-28 Given the very real potential for one or more of these undesirable impacts, the District has, on numerous occasions, insisted that at a minimum, the proposed tunnel must be separated from the District's sole source aquifer by stable geological strata that would act as a natural barrier to migration of water in either direction. This is the only sensible course of action as it is impossible to predict the stability of the proposed construction over time, which will bring unpredictable but probable events such as those experienced during a potential earthquake.

In addition, we have several specific questions based on your letter dated November 13, 2002:

D6-29
1. Please define the term "very small" in regards to risk of leakage in tunnels through aquifers.
2. In reference to your statement that the water pressure in the aquifer is always higher than in the tunnel please identify the pressure of the aquifer in this particular location and the potential pressure of sewer in the proposed tunnel.
3. Please elaborate on the sentence, "…the intent of the design and construction of a tunnel is to build a watertight structure …". Intentions are nice but not assurances.

D6-30
4. Based on documents presented to the District by Mr. Peterson, the tunnel does pass through or in close proximity to the aquifer. Stating that tunnel designs and construction ensure there will be no impacts begs the issue. If you already know it is going to be constructed in close proximity to the aquifer please provide specifics on this item, not merely generalizations.
5. Specify what techniques you reference as having been employed in "a" similar circumstance around the country.
6. The District is requesting a list of projects and references that are verifiable for similar situations.
7. The District finds it assuring that the County has built several tunnels. How many of these have been built through a sole source water supply aquifer?

D6-31
8. While we are sure your hydrogeologists are reputable, the District is not concerned about places and circumstances across the county, we are concerned about our own particular circumstances. As no studies of the Rt.9-195th route have been done, we fail to see how any of your hydrogeologists would be willing to go out on a limb regarding the situation in our particular area. Would you be willing to provide documentation to this end?

D6-32 It appears from your letter that it is a foregone conclusion that the Rt 9-195th Street route will be the approved location. The District is curious as to why the Rt. 9 location was changed at the last minute from 228th Street, where all the hydrogeological studies were performed.

Response to Comment D6-28

The proposed tunnel would be situated, if feasible and consistent with all engineering criteria, within low permeability deposits, rather than permeable water-bearing strata that may be connected in some way with the Lake Forest Park Wellfield. It appears it will be possible to do this for the Route 9-195th Street corridor where it passes north of the wellfield by lowering the tunnel a few tens of feet. Lowering the tunnel would drop it out of fluvial water-bearing deposits into fine-grained, largely lacustrine deposits. Further geotechnical explorations are being conducted to confirm the vertical and lateral continuity of these fine-grained sediments.

Response to Comment D6-29

Tunnel leakage estimates have been refined and are now expected to range be less than 50 gpm for tunnel segments ranging between 1,500 and 22,000 feet in length with the possibility of short-term (less than two weeks) flows of up to 250 gpm. External pressures vary, as do internal pressures, so a single value cannot be provided.

Response to Comment D6-30

King County would specify and design a tunnel conveyance system that is water resistant in accordance with the standards of the tunnel industry.

Soft ground tunnels passing through saturated granular soils under very high head conditions (aquifers) have been successfully completed without inflows to the tunnel. Many such tunnels are regularly constructed throughout this country and world. The most common approach to tunnel construction where high head conditions exist and water is not allowed into the tunneling aquifers is to use a pressurized-face tunnel-boring machine in combination with a pre-cast, bolted and gasketed segmental lining that has the annular space between it and the ground surface outside of it

backfilled with grout. This type of system will be established as minimum criteria for the initial Brightwater tunnel lining system. Several King County projects have been successfully constructed using the systems outlined above. These include the Ft. Lawton Tunnel, the West Seattle (Alki) Tunnel, and the Henderson MLK tunnel, which is currently under construction. Each of these tunnels has similar ground conditions (soils) anticipated for Brightwater. The following is a list of projects completed, or currently under construction, where the soil conditions are different due to regional geological differences, but the groundwater condition (head) meets or exceeds that which is anticipated for Brightwater.

- South Bay Ocean Outfall, San Diego CA, Completed about 1998
- St. Clair River Tunnel, Canada/USA Border, Completed about 1997

- North East Interceptor Tunnel, Los Angeles CA, Construction 50 percent complete, TBM lining system working (dry tunnel)
- East Central Interceptor Tunnel, Los Angeles CA, Construction 75 percent complete, TBM lining system working (dry tunnel)
- Arrowhead East and Arrowhead West Tunnels, San Bernadino CA, Construction 35 percent complete
- West Side CSO Tunnel, Portland OR, Construction 30 percent complete

The designated sole source aquifers in King County include a portion of the Cross Valley Aquifer, Cedar Valley (Renton Aquifer), and the Vashon-Maury Island Aquifer System. There are no tunnels through these aquifers, although a portion of the main sewer trunk system does pass through or near the Cedar Valley Aquifer. Many tunnels constructed in the Seattle area do pass through various aquifers within the area's glacial deposits that are not designated as sole source aquifers but have been used for water supply. King County is not aware of any instances where these aquifers or water supply wells completed within these aquifers have been impacted by tunnels.

More specifics regarding aquifer impacts are included in the Final EIS Appendix 6-B, Geology and Groundwater.

Response to Comment D6-31

Please refer to the response to the City of Lake Forest Park, Comment C4-8.

Response to Comment D6-32

No conclusions will be reached on the location of Brightwater facilities until after the Final EIS is issued. The Draft and Final EIS contain information associated with both the proposed Route 9-195th Street and Route 9-228th Street Systems.

Christine True

Page -3-

D6-32 Detailed hydrogeological studies are needed now, not after the fact. Doing the design before environmental impacts are determined is contradictory to the SEPA process. In this regard alone it is apparent that the Draft EIS is deficient. The District again requests that our specific concerns be addressed during the SEPA process, not afterwards.

Thank you for your time and consideration in this matter.

Sincerely,

Gordon Hungar

Gordon Hungar
President, Board of Commissioners

Cc: Board of Commissioners, Lake Forest Park Water District
Richard Jonson, Attorney
Dan Mundall, Engineer
Bob Peterson, King County
DOH Well head protection planning
EPA
Ron Sims, King County Executive
Mayor Hutchinson, City of Lake Forest Park
Michael Popiwny

BRIGHTWATER
DEIS REVIEW AND DESIGN TERMS OF REFERENCE
ESTIMATED LEVEL OF EFFORT

DECEMBER 27, 2002

LAKE FOREST PARK WATER DISTRICT
4029 N.E. 178th St.
Lake Forest Park
WA 98295

206-365-3211

1.0 Background:

D6-33 King County is proposing construction of a lined tunnel that is to convey raw or treated sewage westward along 195th Avenue, to a submarine outfall near Edmonds. The proposed tunnel alignment and elevation is close to a confined aquifer which is the sole source of water for Lake Forest Park Water District (the District).

D6-34 King County has established a timeline for Review and Comments to their Draft Environmental Impact Statement (DEIS). The current close date for review of this document is **January 21, 2003**.

D6-35 Over the past six months the District has met and corresponded with King County Wastewater Division regarding the proposed impacts to the District's aquifer. In October, 2002 King County offered to assist and expedite the DEIS review process by reimbursement of direct costs. King County offered the District a standard agreement for this assistance, terms of which are presently under review by the District. The assistance would cover the in-house and consultant costs for review and comment within the King County timeline.

D6-36 The Brightwater DEIS was originally prepared with the 225th Street -- Route 9 proposed alignment. More recently King County has favored a new alignment, known as 195th Street -- Route 9 Preferred Alignment. As a consequence, much of the DEIS is not specific to the alignment under consideration. The District has maintained that as such, it is not possible to review or to comment on this document as it is not completely relevant.

D6-37 On December 11, 2002 the District met with King County officials during at a public meeting held at Northshore Utility District. In discussion of the issue, the District and King County agreed to develop a mutually acceptable Design Terms of Reference and Agreement in Principle for the tunnel project near the District's aquifer. The intent of these agreements is to allow input from the District on King County's tunneling design and construction plans during the review process, even if this procedure extends past the January 21, 2003 comment deadline.

2.0 Design Terms of Reference - Scope of Work

King County will develop a Draft Design Terms of Reference (DDTR) and present this to the District in early January, 2003. The intent of this document is to provide a technical basis for an Agreement in Principle between the District and King County. The terms of reference will cover such factors as, allowable proximity to the District's aquifer, and necessary buffer and the extent of that required aquatard It will also describe tunnel construction methods and standards, and methods of inspection. These terms will be reviewed by the District and their consultants, and changes made as necessary to assure protection of the District's water source.

This work will mostly involve the District Engineer and a hydrogeologic consultant specialist and will require several meetings which will include:

- Meeting with King County to present their DDTR.

Response to Comment D6-33

Thank you for your comment.

Response to Comment D6-34

The statement is correct. The comment period for the Draft EIS closed on January 21, 2003. Extensions were granted to agencies and individuals upon request.

Response to Comment D6-35

Thank you for your comment.

Response to Comment D6-36

Both the Route 9-195th Street and Route 9-228th Street corridors were analyzed in the Draft EIS. As part of the ongoing project work and in response to Draft EIS comments, the 195th Street corridor has been identified as the preferred corridor. Both the 228th Street and 195th Street corridors are analyzed in even greater detail in the Final EIS.

Response to Comment D6-37

Comments relating to requested assurances from King County should be addressed directly to King County, rather through the EIS comment process.

- Meeting with hydrogeologic consultant specialist to orient the consultant to the District and King County DDTR, and additional field and office time to review the District's water supply system.
- Meeting with King County to present the proposed amendments for agreement and negotiate changes

3.0 Agreement In Principle

The intent of this document is to provide a basis for agreement between the District and King County that will assure the District's concerns are met with respect to protection of their water source. The intent is for this document to act as a legal instrument between the District and King County in all matters relating to the proposed tunnel design and construction. This document will have criteria and contingency clauses for evaluation of tunnel performance with respect to the District's aquifer. The contingency clauses will outline the steps to be taken in the event of a problem with the proposed tunnel as determined by the established criteria.

This agreement by it's very nature, requires involvement of the District and King County. At least two meetings will be required to draft terms and agree on principal content, while follow up can be communicated by FAX or other means. The Design Terms of Reference forms part of this agreement, however additional technical input is required to establish the terms of performance for the proposed tunnel.

D6-37

LAKE FOREST PARK
WATER DISTRICT

Commissioners:
William Currie
Timothy M. Davis
Gordon Hungar

(206) 365-3211
FAX: 365-3357
4029 N.E. 178th St.
Lake Forest Park
WA 98155

GOOD WATER, NATURALLY

January 21, 2003

Christine J. True, Manager
Major Capital Improvement Program
King County Wastewater Treatment Division
201 South Jackson Street
Seattle, WA 98104-3855

Re: BRIGHTWATER DRAFT EIS – CONFIRMATION OF UNDERSTANDING

Dear Ms. True:

This letter is to confirm our understanding of resent correspondence and verbal communications with your Brightwater team. I have briefly summarized several points that delineate our understanding relative to your proposed project:

D6-38
1. Our District has sought unsuccessfully to have due recognition of potential impacts to our sole source aquifer in the Brightwater Draft EIS. This follows considerable correspondence and meeting with Brightwater staff beginning in June 2002. In fact, we have not even been listed as an "affected agency" in the Brightwater DEIS. We have repeatedly requested a delay in the review deadline to allow time for the required geotechnical review and work on our aquifer to be completed.
2. King County has offered the District an extension for review comments on the DEIS from January 21, 2003 until February 5, 2003; while this two week extension is appreciated, it falls short of the required time to ascertain the impacts of the proposed tunnel on our aquifer. It is now apparent that King County has no intention of recognizing this issue in the DEIS. The District will, however, submit our final comments by the February 5, 2003 extension deadline.

D6-39
3. In discussions with your staff at the Brightwater public meeting on December 11, 2002 at Northshore Utility District, both parties agreed to develop an "Agreement in Principle" that would outline an acceptable "Terms of Reference" for design and performance of the proposed tunnel, as well as legal contingency measures acceptable to the District. We have received further communication, by phone, from your staff of your intention to meet with us in early January 2003 to develop these agreements.

Response to Comment D6-38

Please refer to the response to Comment D6-24 in this letter.

Response to Comment D6-39

Comments regarding agreements for work between the District and King County and assurances requested by the District of King County should be addressed directly to King County rather than through the EIS comment process.

Christine True Page –2-

4. On January 14, 2003 we submitted a scope of work and estimated Level of Effort (LOE) for reviewing your DEIS and for developing a mutually acceptable Agreement in Principle between the District and King County.
5. In recent communication between our attorney and your staff it has been suggested that developing an Agreement in Principle with Design Terms of Reference is outside the scope of the DEIS funding and thus our costs for such are non-reimbursable! Can you kindly suggest how we are to accomplish this work?
6. Could you propose a schedule for the meeting you suggested in early January to discuss and develop a mutually acceptable Agreement in Principle.

Thank you for your attention to these matters. We look forward to meeting with you to finalize a working agreement.

D6-39 Please advise the District if you have misunderstood your intentions in these regards.

Sincerely,

William Currie
Secretary of Board of Commissioners

LAKE FOREST PARK
WATER DISTRICT

Commissioners:
William Currie
Timothy M. Davis
Gordon Hungar

GOOD WATER, NATURALLY

(206) 365-3211
FAX: 365-3357
4029 N.E. 178th St.
Lake Forest Park
WA 98155

faxed to: 296-3749
12:40 1/23/03

To: Christine True, Manager
Major Capital Improvement Programs
King County

Fr: William Currie
Secretary, Board of Commissioners

Dt.: January 23, 2003

Re: **Brightwater – Lake Forest Park Water District Aquifer**

Thank you for the Draft document faxed to District offices on January 21, 2003, which proposes a scope and suggested time frame for geotechnical related investigations and suggested design activities near the District's aquifer. We also appreciate your stated intention to protect our sole source aquifer and to address our "specific concerns regarding aquifer protection".

The District supports your stated intentions, and reminds you that there are specific thresholds of investigation, design, construction and operation which this District will consider either an acceptable or unacceptable risk. For instance, in previous correspondence, you indicated your belief that King County could safely design the proposed sewer tunnel right through our aquifer without adverse impact. This level of risk is clearly unacceptable to our District. For this reason
D6-40 we have suggested repeatedly that we meet with you to initiate a process of defining these thresholds in advance of investigation and design, preferably during the EIS process. This in turn will lead to development of an Agreement in Principle between the District and King County and will also define contingency measures which are acceptable to the District.

The District remains willing to meet with you to further discuss these issues and to develop a mutually acceptable agreement, including an agreement for reimbursement of direct costs as outlined in our previous correspondence.

We suggest meeting on **Tuesday, January 28, 2003**. Please confirm with District staff if this is agreeable with you.

Response to Comment D6-40

Comments regarding agreements for work between the District and King County and assurances requested by the District of King County should be addressed directly to King County rather than responded to in an EIS.

D2
OLYMPIC VIEW WATER DISTRICT

FINAL
ENVIRONMENTAL
IMPACT STATEMENT

Brightwater
Regional Wastewater
Treatment System

COMMENTS AND RESPONSES

OLYMPIC VIEW WATER & SEWER DISTRICT
23725 Edmonds Way
Edmonds WA 98026-8981
Phone (425) 774-7769
Fax (425) 670-1856

Board of Commissioners
John E Elsasser
Patricia L Meeker
Lora L Petso

January 17, 2003

Environmental Planning
King County Wastewater Treatment Division
201 South Jackson St. Suite 505
Seattle, WA 98104-3855

RECEIVED
JAN 17 2003
ENVIRONMENTAL PLANNING DIVISION

Attention: Mr. Don Theiler

Re: Comments on the Brightwater Draft EIS

Dear Mr. Theiler:

Olympic View Water and Sewer District has reviewed the Draft EIS prepared and submitted by King County for their BrightWater Project. Our effort primarily consists of a detailed technical review of the project as described in the Draft EIS and its impact to Olympic View's groundwater source. Robinson and Noble (R & N) conducted this review. R & N has provided hydrogeologic services to Olympic View for many years. They are considered to be one of the preeminent experts in the hydrogeology of the central Puget Sound area. A copy of their review document is attached and their comments and recommendations are submitted as if made by Olympic View. We expect their comments to be specifically addressed in the Final EIS

D2-1 By responding to the Draft EIS, Olympic View does not want to give the impression that they are in favor of the BrightWater Project in any way. Nor do we want to imply that any of the alternatives are preferable or acceptable. In fact, any project alternative that transmits vast quantities of raw sewage above, through or near our aquifer is completely unacceptable.

D2-2 We are generally disappointed in the way the Draft EIS addresses the projects impact on groundwater. The document seems to read as if the project only rates an environmental checklist. It appears to us, as far as groundwater is concerned, that a feasibility study was modified by the addition of Best Management Practices statements and sent out as an EIS. The critical nature of potable water supply from the ground and the project's impact on that supply is routinely dismissed as being insignificant, easily addressed, or is completely ignored. Please be aware, to Olympic View this issue is extremely important.

All of the BrightWater Project alternatives currently under consideration pose a considerable threat to Olympic View's drinking water supply source. All conveyance alternatives have pipes or tunnels that pass through or in the immediate vicinity of the capture zone for the Deer Creek supply aquifer. This puts the supply at considerable risk of the following:

- The reduction or loss of supply due to de-watering
- The loss of total supply during and immediately after construction due to contamination of the aquifer during construction
- The loss of supply due to changes in the groundwater patterns as a result of improper construction of tunnels and/or portals
- The loss of supply due to contamination of the aquifers resulting from an operations accident or seismic event

Should these impacts occur, Olympic View would suffer irreparable harm because they are extremely difficult or impossible to correct.

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Response to Comment D2-1

Thank you for your comment.

Response to Comment D2-2

King County recognizes the importance of the groundwater resource serving the Olympic View Water & Sewer District and is committed to protecting both its quality and quantity during construction and operation of the conveyance system. Due to the importance of this area, additional information is presented in the Final EIS on the nature of the resource through the drilling of new borings, the implementation of a water level monitoring program, and development of subsurface cross sections specific to this area. In addition, numerical analyses of groundwater withdrawal during construction and groundwater infiltration during operation have been completed to provide a quantitative bracket on affects to water levels in the area. All of this information is presented in Appendix 6-B, Geology and Groundwater, of the Final EIS, and summarized in the response to the Washington State Department of Ecology, Comment W5-9.

Environmental Planning
King County Wastewater Treatment Division
January 17, 2003
Page 2 of 2

D2-3 The Draft EIS does not demonstrate that King County understands this risk. As described in the R & N report, the Draft EIS completely ignores or routinely dismisses these risks as a low probability of occurrence. While the BrightWater Project itself may have the ability to survive these high impact-low probability risk events, Olympic View may not be able to recover. We insist that King County address these risks in the final EIS and accept responsibility for any short or long-term harm to Olympic View.

D2-4 The Draft EIS does not demonstrate that King County understands the complexities of the groundwater environment and the technologies necessary to prevent damage to the aquifers. The R & N report details many instances where there is no explanation as to why the drafters came to their conclusions. Direct investigative studies, or third party research, are not cited. We fully expect that King County will conduct or reference further studies to determine the appropriateness of any technologies that they expect to utilize, and detail the studies and technologies in the EIS. These studies should include groundwater modeling, complete with monitoring wells along the conveyance routes, especially around the portals. We expect these monitoring wells to remain in place over the life of the project, with periodic investigations to insure that the groundwater environment is not effected.

D2-5

D2-6 The Draft EIS indicates that the project is going to mitigate risk, using techniques that have not been demonstrated as successful in situations that are of similar scope to your project. References are made to sealing technologies typically used in small diameter drilling operations, without discussion as to whether or not these technologies have been successfully utilized in large-diameter tunneling operations through the types of aquifers that may be encountered. Several places in the Draft EIS, as referenced by R & N, Best Management Practices are referred to as the solution to groundwater issues. It is our understanding that BMP's are generally practices that are developed over time, described and detailed in creditable documents and accepted as conventional wisdom by the industry. The Draft EIS does not describe, nor refer to; the source of the BMP's to be utilized. We expect this to be corrected in the EIS with the BMP's selected to be demonstrably applicable to the scope of the project to which they are being applied.

D2-7 King County is proposing to undertake a project that has an extensive impact on Olympic View Water and Sewer District and its ability to provide its residents with drinking water. We fully expect King County to be completely responsible for any change to the groundwater resource for the life of the project. We expect the Final EIS to reflect this responsibility. We suggest that King County enter into a pre-project agreement with Olympic View detailing this responsibility and the steps King County will take to make Olympic View whole if their project negatively impacts Olympic View in any way.

Sincerely,
OLYMPIC ~~VIEW WATER AND SEWER~~ DISTRICT

Roger C. Eberhart, PE
General Manager

RCE/rce

CC: Board of Commissioners

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Response to Comment D2-3

The analysis of probable significant adverse environmental impacts and reasonable mitigation measures for those identified impacts to water resources is set forth in Chapter 6 of the Final EIS. Comments related to requested assurances from King County should be addressed directly to King County rather than responded to in an EIS.

Response to Comment D2-4

Additional subsurface investigation, geologic interpretations, and groundwater impact analyses have been conducted since the Draft EIS. Below is a summary of these activities for the two proposed Brightwater Treatment Plant sites. Since the Draft EIS, additional subsurface investigation and groundwater impact analyses have been conducted to address your concerns. These additional investigations, additional geologic interpretations, and results of the groundwater analyses are described in Appendix 6-B, Geology and Groundwater, of the Final EIS. For the conveyance corridors, a summary of these investigations and analysis results is included in the response to the Washington State Department of Ecology, Comment W5-9. As the Cross Valley Water district is closest to the Route 9 plant site location, a summary of the additional groundwater impact analyses conducted for the plant sites is provided below.

EIS investigations, evaluations, and analyses have been planned and conducted to analyze concerns related to groundwater and aquifers at each of the proposed treatment plant sites, the Route 9 site and the Unocal site.

At the Route 9 site, groundwater and aquifer work has focused on:

- The potential impact of constructing a wastewater facility over a Cross Valley Sole Source Aquifer
- The potential impact of construction dewatering and long-term operations on the groundwater system, including the Cross Valley Water District's wellfield, private wells in

the vicinity of the site, and Little Bear Creek
- Potential leakage from plant structures and pipelines.

At the Unocal site, work has focused on:

- The potential impact on marsh and wetland areas from plant construction and long-term operations
- The potential changes to the existing groundwater flow regime by vertical retaining walls required for site development
- The potential impact of dewatering on wells and springs in the vicinity of the site.

King County has conducted an evaluation of groundwater and aquifer conditions at these sites in a phased approach. Initially, existing available information was gathered for the two sites, including published subsurface information, information from water districts and purveyors, private well logs from the Department of Ecology, geotechnical reports from other Route 9 property parcels, and remedial investigation data from the Unocal site. Due to the extensive amount of existing subsurface data on the Unocal site (data from over 200 soil borings and nearly 75 monitoring wells), no additional subsurface exploration programs were necessary to evaluate the potential effects of the Brightwater project. In addition, two phases of soil borings, and installation of monitoring wells and instrumentation to measure groundwater levels, were conducted at the Route 9 site. This information, along with laboratory test data from soil samples collected at the Route 9 site, was used to analyze subsurface conditions at each site. Subsurface investigations also included estimating a range of soil property and aquifer parameters, from expected to upperbound, for modeling the groundwater regime.

As part of the EIS process, groundwater impact analyses at the two proposed plant sites was conducted to evaluate potential construction and operation impacts on the groundwater regime. The details of these analyses can be found in Appendix 6-B, Geology and Groundwater, of the Final EIS. These analyses used data developed from our Phase 1 and 2 exploration programs and the conceptual plant layouts (structure size, depth, and use). Other information, such as likely construction methods, sequencing, and duration of construction activities were considered in these groundwater impact analyses. In addition to the potential construction impacts, potential long-term operational impacts to the groundwater regime were evaluated.

Due to the complexity and uncertainties of defining the subsurface environment in a region impacted by glaciation, where multiple interpretations of the published and site-specific subsurface data are possible and common, the most conservative interpretation was used in the groundwater impacts analyses. For example, the data suggest that at the Route 9 site, the production zone of the Cross Valley Aquifer separated from the near surface groundwater regime by an aquitard, a relatively impermeable soil layer. As limited data on subsurface conditions are available at this site, it is conservatively assumed for impacts analyses that the Cross Valley Aquifer production zone is hydraulically connected to the near surface groundwater located beneath the Route 9 site, in which the treatment plant structures will be located.

In addition to evaluating potential site-specific groundwater impacts, we also developed mitigation measures and evaluated their effectiveness for controlling construction dewatering, hydrostatic uplift relief for structures constructed below the groundwater table, and potential leakage from plant basins and piping.

Based on evaluation of groundwater and aquifer conditions, the following site-specific conclusions have been drawn.

1. For the Route 9 site:

- A dewatering well system is the most likely means of controlling groundwater during construction excavation for facilities that extend below the site groundwater table. These well systems will temporarily lower the groundwater table such that excavations and structures can be built “in the dry.” The estimated dewatering rate for the 3-year facility construction period is 350 gpm (gallons per minute). During long-term operations of the facilities, permanent underdrain systems will be installed as needed to relieve hydrostatic uplift pressures (i.e., the high groundwater pressures) beneath some structures. The underdrain systems during normal plant operations are expected to dewater at the rate of 350 gpm. Analyses shows that the amount and duration of necessary construction and long-term dewatering will have no impact on the Cross Valley Sole Source

Aquifer, Cross Valley Water District wells, Little Bear Creek, and other wells in the vicinity of the site. For example, significant adverse impact groundwater analyses at the Route 9 site, it was conservatively assumed that the deeper Cross Valley Aquifer is in direct hydraulic connection with the near surface groundwater regime above it, even though data exist that indicates a low permeability soil layer provides some degree of separation between the upper groundwater zone at the site and the deeper Cross Valley Aquifer. With this conservative assumption, the impact on the closest Cross Valley Water District well, from either construction dewatering or long-term underdrain operation is estimated to be less than 1 foot of drawdown. Details on the groundwater model (Finite Element Simulation) used to evaluate the impacts of the facility construction and operations on the groundwater regime at the Route 9 site is included in Appendix 6-B. The plant underdrain system will also be used as a leak detection system during long-term operations of the treatment plant. This allows for early identification of potential problems, and the ability to take structures out of service for repair before there are any adverse impacts to the aquifer and environment.

- Both construction dewatering and long-term underdrain flows will be managed by re-infiltrating the collected water back into the near surface groundwater regime at the eastern end of the Route 9 site. If necessary, treatment of the collected groundwater will be conducted prior to re-infiltration such that groundwater quality requirements are met. Please refer to Chapter 6 of the Final EIS for more details on management of dewatering and underdrain flows.

2. For the Unocal site:

- The lower yard area of the Unocal site is underlain by pervious granular deposits and is adjacent to Puget Sound, wetlands, and streams. Construction dewatering using wells that are in close proximity to major water bodies will typically generate large flows that are difficult to manage during construction. The estimated dewatering rate for the 3-year plant construction period is 300 gpm, with a peak, month-long rate of 720 gpm. As a means to limit effects to the marsh and streams, more stringent construction dewatering and control methods were assumed than those initially proposed in the Draft EIS, in an effort to reduce the groundwater dewatering-related impacts.
- Construction dewatering using wells in combination with vertical barriers (cutoffs) would be used adjacent to the marsh area. This construction approach is estimated to result in a drawdown to the marsh area at the site boundary of 1 foot or less. Monitoring of the marsh and stream levels will be conducted during construction, and if it appears that the water levels are being affected, augmentation of surface water to the marsh and streams will be provided in a designed controlled manner. This approach of stringent dewatering requirements and surface augmentation of flow, if necessary, is expected to have negligible impacts on the adjacent water bodies at the Unocal Site.
- Hydrostatic uplift forces for structures below the groundwater table can be effectively handled by installing a deep foundation (pile) system to support the structures. This system will not require long-term dewatering, generating no long-term impacts to groundwater flow, and has the added advantage for benefiting the seismic design needs for the plant.
- The natural topography of the Unocal site, with the upper and lower yards separated by a steep slope, will require a series of high retaining walls to provide appropriate site grades for plant structures. Construction of these walls will cause short-term drainage of perched water zones that seasonally exist below the upper yard. The permanent drainage system behind the retaining walls, combined with vertical barriers outside the wall zone of influence will restore the perched water zones to their pre-construction levels during the long-term operations of the facility.

This summary has presented the highlights of King County's EIS evaluation of groundwater and aquifer conditions for the two proposed treatment plant sites. Details of this work can be found in the Appendix 6-B, Geology and Groundwater, and Chapter 6 of the Final EIS.

Response to Comment D2-5

King County agrees that, although no overall adverse environmental impact on groundwater flow or quality is anticipated, a groundwater monitoring program is advisable. Therefore, a Conveyance Construction Groundwater Monitoring Plan will be prepared and implemented by King County prior to the initiation of conveyance construction. The primary purpose of the monitoring program will be to provide early warning of declining water levels, or other adverse affects, in areas considered sensitive. Sensitive areas could include portals, vulnerable wetlands and streams, or Deer Creek Spring and up-gradient locations within the wellhead protection area. The Plan would be prepared in coordination with the Olympic View Water & Sewer District, Washington Department of Ecology, and other interested parties.

Response to Comment D2-6

The described sealing technologies are recognized best management practices (BMPs) that have been used successfully in other King County large diameter tunneling projects in the past decade. The proposed lining system for the tunnels, consisting of bolted, gasketed, precast concrete segments, which is subsequently grouted in place, has been used to provide dry tunnels for 20 years. Many large diameter tunnel projects have been completed using this technology as a BMP for groundwater control. Locally, these projects include King County's Henderson, Alki, and Denny Way Tunnel projects. The South Bay Ocean Outfall in California, West Side CSO Storage in Oregon, and the Channel Tunnel in the UK are other similarly designed projects.

Response to Comment D2-7

The analysis of probable significant adverse environmental impacts and reasonable mitigation measures for those identified impacts to water resources is set forth in the Final EIS Chapter 6. Comments related to requested assurances from King County should be addressed directly to King County rather than responded to in an EIS.

REVIEW OF WATER RESOURCE RELATED ASPECTS OF THE KING COUNTY BRIGHTWATER PROJECT DEIS
For
OLYMPIC VIEW WATER AND SEWER DISTRICT
Robinson & Noble, Inc.
January 2003

INTRODUCTION

Robinson & Noble has provided hydrogeologic expertise to the Olympic View Water and Sewer District (OVWSD) for more than 20 years and is considered to be its groundwater resource expert. In that capacity, we were asked to provide technical review of the DEIS issued by King County for the proposed Brightwater Treatment Plant Project. Our review focused on those aspects of the project that implicate the District's water resource interests.

The initial effort included review of pertinent area reports to assure the DEIS review was accomplished in the context of documented interpretations of the District's groundwater/surface water resources. Following the review of previous work, the entire DEIS document and its appendices were scanned to determine where water-resource issues are discussed. Chapters or sections containing water-resource implications were subjected to a more focused review. When issues of interest to the District were found, specific references, comments, and recommendations were noted. After the focused review of each individual DEIS component was accomplished, a general discussion critiquing that component was developed. Additional general comments regarding the overall DEIS were written after the entire document was reviewed.

The general findings of our review are presented first to allow reference to them in the more specific responses and give the reader a sense of the water-resource aspects of the entire DEIS document. Our intent is that general familiarity will facilitate understanding of our specific comments. The general comments are followed by comments addressing each chapter, appendix, or technical support appendix. Each individual review section is separated into general and specific comment sections. This presentation should allow the reader to understand the DEIS implications without having to wade through several pages of specific citations and comments. We recognize this makes our report of findings longer than more standard reviews, but we are convinced this approach will be more functional to the District given the nature of the DEIS.

It is possible that some who read our comments may infer we stand in opposition to the Brightwater Project. This is an incorrect assessment of our position and role in this matter. The SEPA process is designed to be a protection of the proponent as much as it is a protection from the proponent. Without an honest dialogue regarding concerns and potential liabilities ideally provided by the SEPA process, a project could move forward along a path leading to insurmountable obstacles or liabilities. The task of the document reviewers within the SEPA process is to assure that concerns potentially impacting their interests are known to the proponent and appropriately evaluated before causing expensive delays or project cancellation. Olympic View Water and Sewer District asked us to identify those areas where the project might impact its water resources or where the DEIS provides inappropriate or insufficient information to allow proper assessment of potential impacts to its interests and appropriate participation in the SEPA process. Our impression is that the District's request for our services reflects a desire to assist the

1/16/03

County in designing an appropriate project in addition to protecting its water resource interests. We hope the comments presented here are accepted in the spirit in which they are offered.

GENERAL COMMENTS REGARDING THE DEIS

D2-8 Though the DEIS provides a great deal of technical information, several parts read like they were initially written as a feasibility report with environmental impact aspects inserted as an afterthought. This tendency is particularly apparent in the chapters dealing with groundwater resources, surface water resources, and dewatering (Chapters 4 & 6, Appendix B, and the Earth and Groundwater Technical Appendix). The impression is that no specific analysis of impacts was accomplished, but opinions or impressions of impact potential were merely added to an existing document without technical analysis of the nature or magnitude of those impacts. Some sections, such as Chapter 5, dealing with air quality impacts, show detailed discussion of methods used and the nature of the identified impacts. However, many chapters and appendices merely add language at the end of a paragraph providing a generic description of an environmental component. The discussion level is often more like an environmental checklist rather than an impact analysis. In addition, after a detailed discussion describing the setting and its implications to project execution and an equally long discussion of environmental implications to project execution, often only one or two vague sentences are used to recognize the project's potential to impact the environment. In many instances, no effort is made to relate the described setting to the project's potential to adversely impact that setting.

D2-9 Another document shortcoming is the lack of detailed discussion regarding mechanisms causing identified impacts. Often an impact is acknowledged with only one sentence and no detail of how the impact occurs or to what degree or magnitude it is expected to be reflected in the environment. Water resource impacts, as they relate to hydrologic system dynamics, must be considered. Understanding how the project impacts water resources is essential to any discussion of impact significance and proposed mitigation evaluation. Analyses leading to the conclusion that an impact will or will not occur are as important as the conclusion itself. This level of explanation is not present in the groundwater resource discussions and is only minimally provided in the surface water discussions. Dewatering, a project aspect that will definitely impact groundwater resources, is presented only in the most nebulous of terms as something that will occur. No analysis of the implications at either a well hydraulics or an aquifer budget level is provided.

D2-10 The DEIS also relies on either a simple statement that BMPs will be employed or that all pertinent regulations will be met rather than describing the potential mitigation or at least describing possible methods through which such mitigation might be accomplished. We understand it is sometimes necessary in early project planning stages to rely on the fact that technologies as yet undetermined will influence a given impact. In such situations a statement that BMPs and regulations will provide protection or mitigation may be the best that can be offered. This document, however, is intended to be the only formal opportunity for potentially impacted entities to determine whether their interests are protected or not. Without at least a speculative description of the technologies providing protection, mitigation, or compensation, it is unrealistic to expect those entities to accept that their interests will be protected. In our opinion, the tactic of dismissing an identified impact by the assertion that BMPs will be used or that all pertinent regulations will be adhered to is overused in this DEIS, particularly in matters dealing with water resources.

Robinson & Noble, Inc Page 2

Response to Comment D2-8

Both the Draft EIS and the Final EIS include a discussion of the probable significant adverse environmental impacts and the reasonable mitigation measures associated with the proposal. The Draft EIS was issued at a time when a certain level of information was known relating to the probable significant adverse impacts of the proposal and possible methods to reasonably mitigate those impacts. Consistent with SEPA guidelines, in areas where there was uncertainty regarding the impacts, the Draft EIS presented a worst-case analysis of impacts. The Draft EIS also indicated that ongoing analysis was under way and that additional information would be forthcoming in the Final EIS. The purpose of a Final EIS is to respond to comments on the Draft EIS and, where appropriate, to provide additional or revised information and analysis relating to probable significant adverse environmental impacts of the proposal and reasonable mitigation measures. Since issuance of the Draft EIS in late 2002, considerable additional analysis has been conducted, as is the case on any large project, to further define and develop the proposal and to respond to Draft EIS comments. A number of the details that you have requested in various comments relate to either information that does not involve probable significant adverse environmental impacts or information that is important prior to issuance of actual permits, which is not reasonably included in an EIS. Additional analysis that has been conducted that relates to probable significant adverse impacts that will not be mitigated or regulated into non-significance is included as part of the Final EIS analysis. This includes additional analysis regarding impacts to water resources in Chapter 6.

Response to Comment D2-9

Please refer to the response to Comment D2-4 of this letter.

Response to Comment D2-10

The Final EIS provides additional details as to what is meant in any given area by the use of the term "best management practices." Additional analysis has been developed since issuance of the Draft EIS with regard to significant adverse environmental impacts and reasonable mitigation measures. Also, members of the public and other agencies used the SEPA process to provide specific suggestions for mitigation measures. Based on this input and as is authorized under SEPA, the Final EIS provides additional information concerning mitigation of identified significant adverse environmental impacts.

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D2-11 Many chapters tend to acknowledge and then summarily dismiss impacts or merely imply they will be dealt with. We suggest a more detailed discussion be presented regarding how the project's potential impacts were determined. Where significant impacts are identified, this discussion should detail possible mechanisms either mitigating impacts or compensating harmed parties. In some instances such clarification is imperative for a reviewer to understand the impacts being discussed. Without this type of clarity, it is impossible for entities such as Olympic View Water and Sewer District to know whether a realistic awareness of environmental impacts exists or whether a stated intent to mitigate is sincere and likely to be effective.

General Water Resource Issues

D2-12 Although the DEIS somewhat recognizes Olympic View Water and Sewer District's identification of a wellhead protection area for the aquifer feeding its Deer Creek Spring source, the relationship of the project's conveyance alternatives to that aquifer are only minimally considered. In most cases, the document merely states a component will be within or outside the designated area. The DEIS does not sincerely recognize that such areas have meaning and that activities within them or even in close proximity to them must be evaluated in terms of their potential to impact a protected water resource, especially where a project as large as Brightwater is concerned. This requires specific analysis of the groundwater system's response to the proposed activities. We find no evidence that specific analysis of groundwater responses was accomplished.

Water Quantity

D2-13 The DEIS dewatering discussion does not recognize the significance of that plan component. Most discussion focuses on how groundwater conditions will impact the project's construction and operation. Very little consideration is given to how the required dewatering at plant sites or along the conveyance corridors will impact aquifers and surface water bodies. We found a few one-sentence statements acknowledging that major dewatering will likely impact stream base flows. Likewise a few places acknowledge that dewatering will "lower water levels in wells" (Table 4-4, multiple entries). The upper limit of the dewatering ranges discussed is in thousands of gallons per minute. The duration of such dewatering is not specifically indicated in most references in the document. However, at one point a time frame of six years is discussed. The DEIS also implies that some portions of the project may require dewatering throughout the life of the facilities. Where dewatering might be needed to protect finished structures is not clarified. However, any long-term dewatering will, without question, change the groundwater regime and those in continuity with it.

D2-14 Dewatering at rates of even a few hundred gallons per minute over several months will require the dewatered aquifer to develop a new gradient to accommodate the new point of discharge. This has implications to the entire aquifer not just the dewatered area. These implications affect the overall recoverable resource, base flows to area streams, and spring flows relied on by the District at its Deer Creek facility. We know of examples in the Puget Sound region where even moderate amounts of such dewatering significantly lowered water levels in wells nearly a mile away. When the Trident base at Bangor (Kitsap County, Washington) required dewatering, a major effort was undertaken to monitor water levels in the region, recharge water directly back into the impacted aquifer, and compensate impacted parties. If the upper estimates or even the mid-range estimates of dewatering are required for the Brightwater Project, the necessary dewatering effort could be equivalent to Bangor. Yet, despite the fact that the DEIS acknowledges dewatering and lowered water levels, no discussion is presented regarding these impacts or the major efforts required to define, mitigate, and compensate damaged parties. No description exists for analyses of well hydraulic responses to dewatering. No investigation is presented or even referenced discussing dewatering in relation to the aquifer budget or regional groundwater flows.

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Response to Comment D2-11

Both the Draft EIS and the Final EIS include a reasonably thorough discussion of the probable significant adverse environmental impacts and reasonable mitigation measures for those identified impacts beyond that characterized in this comment. Since issuance of the Draft EIS in late 2002, considerable additional analysis has been conducted, as is the case on any large project, to further define and develop the proposal and to respond to Draft EIS comments. Additional analysis that has been conducted that relates to probable significant adverse impacts that will not be mitigated or regulated into non-significance is included as part of the Final EIS analysis. This includes additional analysis regarding impacts to water resources in Chapter 6 of the Final EIS.

Response to Comment D2-12

Please refer to the response to Comment D2-2 in this letter.

Response to Comment D2-13

Please refer to the response to the Washington State Department of Ecology, Comment W5-9, and the response to Comment D2-2 in this letter.

Response to Comment D2-14

Please refer to the response to the Washington State Department of Ecology, Comments W5-69.

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D2-15 D2-16 Though the District's dependence on spring flow at the Deer Creek facility is stated in the document in a few places, the potential for the activities to temporarily or permanently dewater the springs is not analyzed or even estimated in a manner that would bracket the problem. Nowhere does the document discuss how it might compensate the District for loss of source water. Potentially more damaging than intended dewatering is the fact that all the portal/tunnel alternatives carry the potential to create a drain that could reroute substantial quantities of aquifer water vertically through improperly or incompletely sealed portal structures. Several places indicate that sealing of these structures will be accomplished, but only one recognizes that sealing must assure that groundwater is not given a preferential path outside the structure. The remaining discussions talk about sealing the inside of the tunnel from the outside. This is, of course, an issue that must be addressed. However, it is a different issue than creating a vertical drain that could D2-17 inadvertently deplete the aquifer. Several examples exist where air shafts for mines in the Puget Sound region have completely dewatered overlying sediments by mechanisms similar to those that could be created by improperly sealed portal/tunnel structures. Nowhere is there any description of how the proposed sealing will be accomplished. Since this type of subsurface sealing is integral to well drilling (a field our firm is extremely familiar with) and sealing of relatively small-diameter boreholes can be problematic, we are concerned the proponent may have unrealistic expectations that such sealing is routine. We find it disturbing that the critical nature of this construction aspect of any proposed conveyances is not considered with more specificity in the DEIS.

Water Quality Issues

Contamination is discussed repeatedly throughout the DEIS. In almost every instance, the discussion elaborates on how the existence of contaminated soil or water in proximity to a planned component of the project will not adversely impact the project or how such existing contamination will be handled in the context of the construction effort. The DEIS consistently D2-18 ignores the issue that construction activities and the completed facility might cause environmental contamination, including surface water and groundwater. If the concept is mentioned, it is dismissed with either a "we won't contaminate" statement or is given a low probability of occurrence and ignored. Because these facilities are designed to collect and treat sewage, we recommend a more rigorous evaluation of the potential for contamination events be accomplished and real mitigation responses be identified. The document admits that the possibilities of emergency overflow and spills exist and in places suggests they are expected (though rare). The only attempt to justify these environmental impacts is that the frequency of such events will be D2-19 diminished and that they will occur somewhere and sometime even if the project is not built. Even if this is true, the obligation within the SEPA process would seem to be identification of who will be impacted, where and to what degree that impact is mitigated, and how might that impact be mitigated. We found no such detailed discussion of these overflow contamination events, their frequency, or their effects. The entire aspect of contamination, groundwater vulnerability to D2-20 contaminants, and who will likely be affected requires more explicit work before reviewing entities can assess the risks to their water-resource interests should the project to go forward as proposed.

D2-21 Breach of an influent conveyance line would, more likely than not, result in serious contamination of groundwater, surface water, or both. The DEIS does not discuss the nature of the likely contaminants, the characteristics of their movement through the environment, or the methods by which they might be recovered, treated, or otherwise mitigated. Such an impact to the region's groundwater could easily require a large number of people to find a new water source.

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Response to Comment D2-15

Please refer to the response to Comments D2-2 and D2-104 in this letter.

Response to Comment D2-16

The Final EIS analysis analyzes in greater detail the likelihood of impacts to Olympic View Water & Sewer District's water sources and discusses appropriate mitigation measures concerning the potential impacts in Chapter 6 and Appendix 6-B, Geology and Groundwater, of the Final EIS.

Response to Comment D2-17

An additional hydrogeotechnical investigation was completed after the publication of the Draft EIS to evaluate potential risks and appropriate construction methods for sealing the tunnels and portal structures to prevent flow along the structures. The results of the study are detailed in Appendices 6-B, Geology and Groundwater, and 6-F, Groundwater and Stormwater Management at the Candidate Portal Sites, of the Final EIS.

Response to Comment D2-18

Please refer to the responses to Comment D2-2, in this letter, and to the Washington State Department of Ecology, Comment W5-9.

Response to Comment D2-19

Please refer to the response to the Washington State Department of Natural Resources, Comment W3-121.

Response to Comment D2-20

Please refer to the response to the Washington State Department of Ecology, Comment W5-43.

Response to Comment D2-21

King County agrees that breach of an influent line could have serious consequences for groundwater quality, although there

are already extensive wastewater influent interceptors and sewer pipe networks throughout the metropolitan Puget Sound area that have served well for years, without catastrophic failures resulting in groundwater contamination. Existing surface waters are well above tunnel elevations and would not be affected. The potential for a breach is discussed in Chapter 4 of the Final EIS. King County's conclusion, based on local and national tunneling experience, is that there are no realistic or plausible mechanisms for catastrophic breaching of an influent line. In the Olympic View area, smaller scale cracking could occur and would result in leakage into the tunnel, rather than the reverse. For further details, please refer to the response to Comment D2-2 in this letter.

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D2-22 Nowhere in the document are the potentially devastating effects of a broken influent main given more than a brief acknowledgement. If the force main influent option to the UNOCAL site were to be exercised, a breach of that line could destroy water quality of the source aquifer for the Deer Creek Springs. The creation of a direct access to the aquifer more than 50 feet in diameter immediately up-gradient from a spring that serves as a major water supply (Portals 3, 22, 23, and 24) would be seen by most as a threat to water quality. It is passed off in this DEIS as not constituting a meaningful risk. Where the risk is acknowledged, it is excused with simplistic language referring to BMPs and meeting regulatory requirements. The term BMP suggests a cumulative wisdom gained by many applications of a given technique. Since the number of projects involving portal/tunnel components of such magnitude is quite small and the number of such projects accomplished in the unconsolidated sediments of the Puget Sound Region is even smaller, no body of experience in this type of endeavor would likely warrant confidence in a general claim that BMPs are known for this project. We submit that specific procedures, protocols, and criteria would be more appropriate in discussing how the groundwater quality will be protected during and after construction of the portals and the force mains. The amount of threat represented by the gravity main influent line for the UNOCAL site is lower than that of the force main alternative but still means that very large amounts of contaminants will be carried through an aquifer protection area with no analysis of what might go wrong or what might be done to mitigate if contamination does occur. The risk of contamination from the surface is certainly more likely with portals than without them. No discussion is provided discussing the degree of threat created by the portals.

D2-23

D2-24 Though the level of threat is much lower for the proposed gravity lines carrying treated water from the Route 9 site to one of the outfalls, this scenario deserves more detailed discussion as well.

D2-25 At the very least, a monitoring program should have been proposed to define antecedent conditions and observe if and how groundwater conditions change after placement of any of the proposed conveyance options of the Brightwater Project.

SPECIFIC COMMENTS (BY CHAPTER/APPENDIX)

D2-26 It is difficult to reflect omissions in the context of specific citations and comments. In some cases we are sure that assertions made within the general comments will not be reflected in individual comments to the degree they deserve. This should not be construed as an indication that those issues are unsubstantiated nor that they are unimportant. Because there is a consistent pattern of omission and unsubstantiated dismissal of impacts as insignificant or completely mitigated, we have identified portions of the document where these tendencies manifest themselves even though in some instances the topic of discussion is not necessarily an issue that directly impacts the District.

Chapter 1: Summary

D2-27 **Section 1.8.2 Conveyance System Impacts, p. 1-10, 1st Paragraph**

"The Unocal System also has a much longer influent conveyance tunnel than Route 9, which would result in a longer flow of untreated wastewater. Once in operation, the conveyance facilities for either Route 9 or Unocal would not cause any significant adverse impacts."

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Response to Comment D2-22

Please refer to the response to Comment D2-21 of this letter. Additional discussion of the potential impacts from a conveyance system breakage is included in Chapter 4 of the Final EIS. The described sealing technologies are those that have been used successfully in other King County large diameter tunneling projects over the past 20 years. BMPs will be developed as part of the preliminary and final design of the Brightwater System.

Response to Comment D2-23

Please refer to the responses to Comment D2-2 in this letter, and to the Washington State Department of Ecology, Comment W5-9.

Response to Comment D2-24

Effluent conveyance groundwater evaluations are described in detail in Appendix 6-B, Geology and Groundwater, of the Final EIS and in the response to the Washington State Department of Ecology, Comment W5-9.

Response to Comment D2-25

Please refer to the response to Comment D2-5 in this letter.

Response to Comment D2-26

Thank you for your comment.

Response to Comment D2-27

This Final EIS contains additional detailed analysis of the impacts and mitigation associated with the construction and operation of the conveyance pipelines for the Unocal System and the two Route 9 Systems. Please refer to Chapter 4 of the Final EIS for an analysis of tunneling impacts, associated mitigation, and projected impacts to the Cross Valley Aquifer.

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D2-27 This says it is an important distinction but it isn't. Is there a concern or not? Presumably, the probability of rupture is related to the length of the conveyance. The fact that one is longer, therefore, requires a difference in the probability of rupture. This is implied in the quoted statement. The issue is then summarily dismissed in the following statement. This is noted because it is an early example of a recurring tactic of the DEIS. Potential impacts are recognized or implied only to be summarily and often immediately dismissed.

Chapter 2: Background

D2-28 This chapter presents a fine history of how the Brightwater project evolved and why it is needed. There is nothing in the chapter that relates to water resources or any potential to impact them.

Chapter 3: Description and Comparison of Alternatives

D2-29 A detailed hydrogeologic comparison of the force main and the gravity sewer options reveals issues that have been left unaddressed in this chapter. The consequences of building a conveyance tunnel through aquifer material is not addressed, nor is the difference between construction within aquifers as opposed to aquitard materials. The nature of and lateral consistency of the sediments the utilities will tunnel through is not discussed. Evidence from the subsurface work performed in the area in the past indicates the geologic and hydrogeologic conditions are probably irregular in their vertical and horizontal distribution. If the force main options are pursued, the impacts to the aquifer are likely to be worse and the consequences of a breach more serious. If a gravity sewer system is implemented, there is still no assurance that the tunnel would remain in aquitard material throughout its run. The authors should consider brief statements explaining the potential impacts and the differences in impacts between the various options to put the discussion more in the context of the SEPA process. A statement that gravity routes carry this type of risk while force

D2-30 mains carry another type of impact potential would help the reader and enhance the communication of the differences between options with regard to their potential to impact the environment.

Section 3.3.2.2 Table 3-9. Summary of Impacts and Mitigation Measures – Earth and Groundwater

p. 3-36, 3rd Column

"…groundwater could be depleted due to aquifer drainage along the tunnel bore."

D2-31 Systematic pressure grouting and/or bentonite sealing the outside of all subsurface structures is essential to preclude the natural tendency of such structures to drain groundwater by creating preferential flow alternative routes for flow. This type of sealing will be complicated for construction at this magnitude. Recognition of that fact should be given. Monitoring is also an essential mechanism for determining whether the sealing has been effective.

p. 3-36, 4th Column

"Standards for design and construction will be used to ensure quality of construction to prevent leaks. Routine inspections will be done to ensure integrity of all processes and pipelines."

D2-32 Standards should be designed as part of a Quality Assurance/Quality Control (QA/QC) program and made available for review. Perhaps the program should be administered by an independent agency.

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Response to Comment D2-28

Thank you for your comment.

Response to Comment D2-29

Please refer to the response to the Washington State Department of Ecology, Comment W5-44. Information regarding building a conveyance pipeline through aquifer materials is discussed in Chapter 6 and Appendix 6-B, Geology and Groundwater, of the Final EIS.

Response to Comment D2-30

Please refer to Chapter 3 of the Final EIS for an updated description and comparison of project alternatives. Further detail on potential impacts to groundwater can be found in Chapter 6 of the Final EIS.

Response to Comment D2-31

The mitigation of preferential flow is described in Chapter 6 of the Final EIS. Systematic grouting to seal the outside of subsurface structures has been successfully completed on previously constructed King County tunnel projects.

Standard King County construction policy requires the contractor to develop and submit a monitoring plan for the County to review and approve prior to construction.

Response to Comment D2-32

Standard King County construction policy requires that multiple QA/QC procedures be implemented throughout the design and construction phase of a project. The County will retain construction managers and observers who will be providing oversight and review of the construction process in accordance with King County contractual requirements.

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D2-33 **p. 3-36, 4th Column**
"Pressurized force mains within lined tunnels, grouted and gasketed and bolted or pinned liner segments would minimize if not eliminate reduce [?] the potential for breakage or leakage into the aquifer from a gravity-only tunnel or force main-gravity tunnel."

These details should be adhered to during any subsurface construction to protect groundwater. It should be noted that this type of sealing is independent of that required to protect against rerouting of groundwater outside the structures. We suggest that nothing done during construction or afterward can "eliminate the potential for breakage or leakage" and that the word reduce be selected even though it is then redundant to "minimize" used earlier in the statement.

D2-34 **p. 3-36, 1st Column**
"It is possible that leaks from treatment plants or influent pipes entering the site could enter the shallow groundwater system"

The possibility of leaks though recognized is not further discussed in the document. This comment is to note that the DEIS acknowledges such impacts.

D2-35 **p. 3-36, 1st Column**
"Upward groundwater pressures could crack or damage structures, with potential resulting leaks if upward groundwater pressure are not adequately addressed."

No data is provided to show where this assertion comes from within the DEIS. If true, will this require constant dewatering throughout the life of the facility?

D2-36 **p. 3-37, 3rd Column**
"Voids along the tunnel bore could serve as a zone of preferential flow, providing a drain that might deplete the aquifer. Tunneling options would traverse the Olympic View Water and Sewer District's groundwater capture zone on the western end of the Unocal 228th Street and 195th Street corridor would traverse upgradient of the Lake Forest Park wells. A broken gravity pipe could also cause aquifer depletion and a reduction in available water supply."

This is a critical point and a major concern for groundwater conservation. These same principles need to be applied to portal construction techniques to eliminate vertical migration of water through a natural confining unit that isolates deeper systems from shallower systems.

D2-37 **p. 3-37, 4th Column**
"Tunnel liner grouting along the tunnel length could prevent preferential flow along possible voids and eliminate or reduce aquifer depletion."

A critical look at grouting techniques needs to be employed to ascertain the effectiveness of this to seal shaft annuli. Monitoring should be explicitly discussed as a mechanism to assure that sealing has been adequately accomplished.

D2-38 **p. 3-37, 4th Column**
"Tunnel liner grouting along the entire length of the tunnel would prevent preferential flow along possible voids and eliminate or reduce aquifer depletion. Force main pipe in tunnel construction, lining of the tunnel, and emergency valving will reduce the potential for depletion of the aquifer

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Response to Comment D2-33

Tunnel leakage estimates have been refined and are now expected to range between 10 and 150 gpm for tunnel segments ranging between 1,500 and 22,000 feet in length. Therefore, the Final EIS has been revised to remove the word "eliminate". Additional information regarding tunnel leakage is found in Appendix 6-B, Geology and Groundwater, while details on the tunnel construction are located in Appendix 3-B, Project Description: Conveyance.

Response to Comment D2-34

Please refer to the response to Comment D2-33 in this letter.

Response to Comment D2-35

Discussion of hydrostatic uplift is included in Appendix 6-B, Geology and Groundwater, and Chapter 6 of the Final EIS. To counter-act upward hydrostatic pressures at the base of structures, the standard initial approach is to evaluate adding more structural weight to provide an adequate factor of safety. However, because of the high hydrostatic pressures at the Route 9 site, adding sufficient additional structural weight (i.e., thickening concrete base slabs) is not technically viable and is also cost prohibitive. Therefore, at the Route 9 site, structural underdrains are planned for the treatment facilities and water holding tanks. The flow from these underdrains will then be re-infiltrated into the near-surface aquifer using constructed wetlands at the site. The groundwater impact analyses, as summarized in the response to Comment D2-4 in this letter, evaluated the effect of groundwater flow into the underdrains for the lifetime of the treatment plant. The analyses showed that there would be no significant adverse impacts as a result of these underdrains.

Response to Comment D2-36

The design of portals will consider and include methods to prevent vertical migration of groundwater. Appendix 3-G,

Construction Approach and Schedule, of the Final EIS describes portal construction methods.

Response to Comment D2-37

Grouting techniques will be specified based upon ground conditions and tunnel lining methods. Standard King County construction policy requires the contractor to develop and submit a groundwater monitoring plan for the County to review and approve prior to construction.

Response to Comment D2-38

King County agrees these are key issues, and a more thorough discussion of them is included in Chapter 6 and Appendix 6-B, Geology and Groundwater, of the Final EIS. Please refer to the response to the Washington State Department of Ecology, Comment W5-9, for further details.

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by infiltration into a gravity-only or shallow gravity pipeline/tunnel. Routine inspection of the pipeline and monitoring of the aquifer will reduce any potential for aquifer depletions and corrective measures would be taken."

D2-38 It is important that the drafters of the DEIS are aware of these key issues. They should be addressed more thoroughly in a groundwater hazard discussion in this chapter. Some effort should be made to define, at least conceptually, what level of monitoring is being proposed and how it will be placed and used.

p. 3-38, 1st Column

D2-39 *"Should leaks to shallow groundwater occur, it is very unlikely that leaks would continue to migrate downward to the regional Advance Outwash aquifer because the aquifer is confined and under artesian pressure. Artesian pressure results in upward vertical gradients (pressure) that would inhibit flow of contaminants downward into the aquifer. Any contaminants that may reach the shallow, unconfined aquifer should tend to flow horizontally toward the discharge zone of the shallow aquifer of the Little Bear Creek."*

Are the aquifers artesian or flowing at land surface? An artesian aquifer only implies it is a confined system, a flowing well or spring indicates the artesian pressure pushes the water level above land surface. Even a confined aquifer can be contaminated though infiltration, which could in turn contaminate deeper systems if the appropriate conditions exist. The assumption that confined aquifers cannot be contaminated is incorrect.

Chapter 4: Earth and Groundwater

General Comments

D2-40 Chapter 4 does not adequately address potential impacts to groundwater resources for either the treatment plant sites or (particularly) the conveyance corridors, and as such, does not adequately provide specific mitigation for potentially effected users. There is a conspicuous lack of specific hydrogeologic information in this chapter. This together with the sparse and at times erroneous and inconsistent hydrogeologic descriptions presented, conveys the impression that too little attention has been paid to the subject of groundwater and the potential for the project to impact it. The general overall impression from the DEIS and particularly this chapter is that the focus was on impediments to the construction rather than the impacts caused by the construction.

D2-41 It appears that this chapter was written as if the authors were unaware of the Olympic View Water and Sewer District Wellhead Protection Plan (WHPP). The conveyance corridors for the Unocal site and the 228th corridor for the Route 9 site both cross directly through the center of the one year capture zone. Further, the profiles constructed for the DEIS are insufficient to determine the relationship of the sewer tunnels to the aquifer. At least one option (the 228th force main) passes through Qva within the one year capture zone; others may pass through it or will be in close proximity.

There is very little use of the Olympic View Water and Sewer District's (OVWSD) wellhead protection plan (WHPP) or, for that matter, those of other entities in the region in Chapter 4 (or elsewhere in the DEIS). It is as if these critical, state mandated plans were not considered in any technical project analyses during the preparation of the DEIS, or analysis of potential impacts to groundwater resources. The only purveyor to which any significant discussion of a WHPP was

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Response to Comment D2-39

The text in Chapter 6 of the Final EIS has been revised to reflect the fact that having a confined aquifer does not, in itself, eliminate the possibility for contamination. The statement has also been revised to reflect additional groundwater exploration data gathered since preparation of the Draft EIS. This additional information shows that water levels in confined zones beneath the Route 9 site are above land surface in some locations of the site. Under these circumstances, contamination present near land surface would tend to remain in place in response to the upward hydraulic gradient.

Response to Comment D2-40

Please refer to the responses to Comments D2-2 and D2-4 of this letter, which provide a summary of groundwater impacts analyses conducted for the conveyance pipelines and treatment plant sites respectively.

Response to Comment D2-41

Please refer to the responses to Comment D2-2 in this letter, and to the Washington State Department of Ecology, Comment W5-9.

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D2-41 made is Cross Valley Water District at the far eastern end of the project area. Considerably more effort needs to be put forth in the DEIS with regard to how the project will affect groundwater purveyors that have service areas, and more importantly that have recharge zones located along the conveyance corridors or within hydraulic reach of these corridors. This assessment applies to both construction impacts and operational impacts.

D2-42 Of primary concern for the western portion of the project area is the fact that the conveyance corridors are routed through the Deer Creek Spring capture zone. Deer Creek Spring is the primary groundwater resource utilized by OVWSD, no apparent effort was made to properly define the resource, the relationship the project has to the resource or to provide mitigation/compensation responses. The Unocal site corridor (west of access portal #5) and the Route 9 site – 228th corridor (west of access portal #26) both pass directly through the one-year capture zone. Additionally, both options have access portal sites proposed to be located within the five year zone (#3 for Unocal and #24 for 228th). The Route 9 site – 195th corridor (the proffered option) passes just south of the capture zone (within 200 feet at the closest point) and has an access portal (# 23) sited in close proximity (200 to 300 feet) as well. Although not within the actual capture zone, the 195th corridor and access portal are up gradient from the Deer Creek Spring and, given the nature and scale of the proposed construction, there is a high-enough probability of impacting the resource, that concern is warranted for this route as well.

D2-43 Profiles provided in the Technical Appendices under earth and groundwater (Figures 2 through 5) are not of sufficient accuracy and detail to be useful in determining the position of each of the proposed mains relative to the Qva aquifer (the source aquifer feeding Deer Creek Springs). The geologic nomenclature used to describe each subsurface unit includes groups of descriptions rather than generally accepted single unit nomenclature (i.e. Qvt, Qva, etc.) Additionally, some of the borings used for subsurface data were projected to the profile lines from some distance away. The resulting profiles imply unlikely or impossible stratigraphic relationships (i.e. recent alluvium below glacial deposits). It is not clear what the procedures for interpretation were, if any interpretation was intended. Geologic and hydrogeologic interpretations are extended outward from individual borings no more than 300 feet, but the position of the borings is typically indicated to be projected 1,000 feet to several thousand feet from the profile. Using the elevations of the various mains shown in the DEIS profiles and comparing these to the elevation of the Qva as determined in Robinson & Noble's WHPP, it appears that the force main for each of the conveyance route options places the line within 50 to 75 feet below the bottom of the Qva in the area of the OVWSD's capture zone, and the 228th route is actually indicated to be within the aquifer for a considerable distance. More accurate geologic and hydrostratigraphic cross sections need to be generated.

D2-44 Potential impacts to the Qva aquifer may occur in a number of ways. These include impacts occurring during construction and during operation of the system. Construction impacts could include contamination of the aquifer during tunneling or construction of access portals (i.e. introduction of petroleum products, access for surface chemicals spilled by the construction related activities or by unrelated events such as traffic accidents or fires). Dewatering during construction could result in a lowering or depletion of the aquifer. Permanent groundwater depletion could result if a conduit or drain is created either vertically at the access portals or along the length of the tunnel. Operational contamination could result if the pipes leak or from excessive exfiltration, particularly with the force main options. Obviously, the worst case would be with the Unocal line, which would be transporting untreated sewage, but leaks of secondary treated effluent could pose a health risks as well if it were to enter the aquifer or the spring.

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Response to Comment D2-42

Please refer to the responses to Comment D2-2 in this letter, and to the Washington State Department of Ecology, Comment W5-9.

Response to Comment D2-43

New regional cross sections and area-specific cross sections (including the Olympic View Water & Sewer District area) have been developed based on nomenclature developed by the Seattle Geologic Mapping Project. The subdivision of nomenclature provides a higher level of geologic and hydrogeologic differentiation and should help address your comment about inadequate detail and accuracy. The profiles have also been located to pass through boring and well locations, reducing the need to project subsurface data. The profiles show the location of the tunnels and portals relative to aquifers and aquitards and to significant water resource features, such as Deer Creek Spring and water district wells. These cross sections are included in Appendix 6-B, Geology and Groundwater, of the Final EIS.

Response to Comment D2-44

Please refer to the response to Comment D2-38 in this letter.

1/16/03

D2-45 Mitigation for the various impacts can include a number of options. One option is to consider rerouting the lines so that the Unocal and 228th Street corridors pass outside the capture zone, or the 195th Street corridor passes further away. A deeper set below the bottom of the Qva could be accomplished by considering only gravity mains or deepening the force mains in the area of the OVWSD capture zone. Rerouting or deepening the tunnels will help to mitigate the potential for contamination, both during construction and later during operation. Once one of the corridor options is selected and prior to construction, appropriate monitoring of the Qva aquifer and the spring needs to be established for both the construction and operation phases. Along with monitoring, an adequate contingency plan needs to be developed prior to construction. Other mitigation options should include carefully conceived plans to accomplish sealing of potential conduits along tunnels and access portals. The proponent should also consider other options that may minimize the need for extensive dewatering such as ground freezing, cofferdams, and possibly slurry-walls.

D2-46 **Section 4.1.1 Regulatory Environment, p. 4-1**
The DEIS contains insufficient discussion of the implications of identified regulations to the project. We should not be told merely that regulations exist but rather how they constrain or facilitate the project. This entire section on regulations fails to relate regulations to impacts or impact abatement. Discussion of how the body of regulation being discussed eliminates the possibility of a given impact or provides some protection from adverse impacts that would otherwise occur is needed here to make the section pertinent to evaluation of environmental impact analysis.

D2-47 **Section 4.1.1.3 Local Regulations, p. 4-5**
It is presumed that Snohomish County has ordinance language protecting aquifer recharge and wellhead protection areas or will have as part of its obligations under the Growth Management Act. Yet, there is no discussion of the regulation of these sensitive areas.

D2-48 **Page 4-6, 3rd Paragraph, Line 6**
Typo – "Vashon State" should read "Vashon Stade"

D2-49 **Section 4.1.2.3 Regional Groundwater Regime, p. 4-6**
"Where the till or other low permeability stratum is absent, most of the flow is likely downward. Through much of the greater King and Snohomish County area, groundwater flow beneath the till is usually under confined conditions."

Groundwater systems where the Qva is found beneath till exist as both confined and unconfined aquifer conditions. It is inappropriate to disregard unconfined aquifer conditions beneath till since that condition will have a bearing on the nature of contaminate fate and transport in the event of a spill. The DEIS appears to erroneously simplify the issue by presuming that Qva aquifer material is confined where till overlies it. Specific conditions should be defined before analysis of risk and effectiveness of mitigation can be accomplished.

D2-50 **Section 4.1.3.1 Unocal Site – Groundwater, p. 4-12, 1st Full Paragraph**
"Groundwater conditions at the Unocal site are typical of the regional groundwater conditions."

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Response to Comment D2-45

Please refer to the response to Comment D2-38 in this letter.

Response to Comment D2-46

The regulatory framework section of Chapter 4 has been expanded to discuss how the regulations apply to the Brightwater System. This discussion is included in the impact and mitigation sections of Chapter 4.

Response to Comment D2-47

The implementation of regulations is described in the impacts and mitigation sections of the Final EIS chapters. The information has been organized such that the applicable regulations are initially cited. Then, an evaluation of the project is conducted to see what impacts, if any, could be expected from constructing and operating the Brightwater System. Finally, mitigation approaches and achieving the necessary regulatory requirements are cited.

Response to Comment D2-48

Thank you for your comment. This typographic error has been corrected.

Response to Comment D2-49

Please refer to Appendix 6-B, Geology and Groundwater, of the Final EIS for more detailed geologic and hydrogeologic interpretations of plant sites and the conveyance corridors. Additional subsurface exploration programs have been conducted since the Draft EIS, and geologic interpretations and cross sections have been developed that more precisely reflect geology conditions in the Brightwater System Area.

Response to Comment D2-50

Please refer to Appendix 6-B, Geology and Groundwater, for more detailed geologic and hydrogeologic interpretations of plant sites and the conveyance corridors. Additional subsurface exploration programs have been conducted since

the Draft EIS and geologic interpretations and cross sections have been developed that more precisely reflect geology conditions in the Brightwater System area.

The statement that the Unocal site groundwater conditions are “typical of the regional conditions” has been revised to reflect site’s atypical conditions, including groundwater discharge to Puget Sound.

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D2-50 This statement is incorrect. The Unocal site is part of an atypical discharge band along the western boundary. Most of the critical hydrogeology is missing and the deeper aquifers below the site are salty. It would be a mistake to consider this area typical of the region affected by this project.

Section 4.1.4 Conveyance Corridors, p. 4-19, 4th and 5th Full Paragraphs
"Table 4-1 provides specific information on existing conditions for each conveyance corridor and segment, including portal siting areas. More detailed descriptions of geologic conditions are provided in the Earth and Groundwater Technical Appendix."

D2-51 The Earth and Groundwater Technical Appendix does not provide any substantial descriptions of the pertinent hydrogeology. This appendix provides very generic discussions of geologic units that would be equally true for most settings of the Puget Sound Region. It gives uninterpreted profiles with simplistic renderings of the surface geology and a few simplified geologic logs from test wells along the proposed tunnel routes. This should not be considered an appropriate basis for an analysis of potential impacts to the groundwater resources. Further, the document is not internally consistent with the descriptions provided in this appendix.

Table 4-1 Geology, Soils, Groundwater, and Mapped Hazard Areas in Conveyance Corridors, p. 4-20
D2-52 Overall this is a good table with a few points of confusion; its almost too generic to be of use but it represents a sufficient summary. The reference stating "same as Unocal 195th Street Corridor" on the top of page 4-23 is confusing in that there is no designation elsewhere in the table that is so labeled.

Section 4.1.4.5 Conveyance Corridors – Groundwater, p. 4-26, Last Paragraph
"...groundwater flows vertically between aquifers. For the project area, regional recharge for the deeper aquifers takes place predominantly along the western front of the Cascade Mountains several miles east of the project area."

D2-53 This is not a proper representation, as it puts too much emphasis in the generic diagram presented as Figure 6 in the Earth and Groundwater Technical Appendix. Since the vertical component of any flow system is always served first (gravity requires it), the nature of recharge cannot be reduced to the regional generality presented in the figure. This is particularly inappropriate when discussing impacts of a specific project upon a specific groundwater regime. An appreciable amount of water is transmitted vertically through the laterally discontinuous and highly variable sediments of the Brightwater project area.

Section 4.1.4.5 Groundwater - Water Supply Wells, p. 4-27, 1st and 2nd Paragraphs
D2-54 There is no mention of proximity of conveyance corridors to the Olympic View Water and Sewer District source aquifer. The Unocal influent corridor, which carries untreated sewage, traverses directly through the center of OVWSD WHPA. The Route 9 site effluent corridor along 228th also traverses directly through the center of OVWSD WHPA. The Route 9 site effluent corridor along 195th (preferred route) passes close to southern margin of WHPA. The DEIS suggests a generalized groundwater flow direction southwestward across the Intercity Plateau (figure 4-10). Robinson & Noble WHPP for OVWSD determined flow through Qva aquifer is westward toward Deer Creek Spring and the Sound. This puts the 195th Street corridor parallel to the gradient. Though this may be a better situation than being down gradient of the conveyance it is not without risks as purported by the EIS which describes the corridor as down-gradient from the WHPA and therefore no threat to the Deer Creek springs complex.

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Response to Comment D2-51

Documented in the Final EIS are significant additional subsurface data gathering programs, geologic interpretations, and hydrogeologic evaluations and numerical analyses of groundwater effects during construction and operational phases of the Brightwater System. Please refer to Appendix 6-B, Geology and Groundwater, of the Final EIS.

Response to Comment D2-52

Appendix 6-B, Geology and Groundwater, of the Final EIS has been significantly updated and revised since the Draft EIS and addresses your concerns.

Response to Comment D2-53

The Final EIS has been changed based on the new data collected since preparation of the Draft EIS to reflect that recharge to project area aquifers is primarily through direct infiltration of precipitation and that recharge along the mountain front to the east has little bearing on the primary aquifers of interest.

Response to Comment D2-54

Please refer to the response to Comment D2-53 in this letter.

Response to Comment D2-55

Please refer to the response to the Washington State Department of Ecology, Comment W5-9, for a summary of the groundwater analyses conducted relative to the conveyance corridors and the Olympic View Water and Sewer District (OVWSD). Also, Appendix 6-B, Geology and Groundwater, of the Final EIS provides a more detailed summary of the analyses and results. As noted by these documents, impacts to the OVWSD well system are expected to be negligible and can readily be mitigated by standard construction and tunneling approaches that are planned for the Brightwater System.

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D2-55 **Section 4.1.4.7 Route 9 Corridors, p. 4-28, 3rd Sentence**
"In terms of the geologic affected environment and ..... there is no clear advantage to selecting either alignment."

One definite advantage is that the 195th corridor doesn't pass through the OVWSD WHPA. The level of risk, though it still exists, is much lower for the 195th corridor.

Corridor Evaluation
Based on profiles provided in the Earth and Groundwater section of the Technical Appendices, the following was determined:

D2-56 **Section 4.1.4.7 Unocal Conveyance (Figure 3, Sheet 1 of 5)**
The force main tunnel will pass under the OVWSD WHPA at elevations between 50 and 100 feet west to east. This is approximately 50 to 75 feet below bottom of Qva as interpreted in the WHPP investigation. This places it within pre-Vashon transitional beds according to cross sections developed by Robinson & Noble for the WHPP. The gravity tunnel to carry influent to the Unocal site will be approximately 100 feet deeper. Provided the promised isolation is achieved, this option if properly sealed is less likely to impact OVWSD's aquifer during construction. Further, exfiltration during operation should not pose nearly as much threat to water quality in the aquifer. However, as this tunnel will be used to transport untreated waste and it must rise to deliver that sewage to the elevation of the Unocal site, the details of the west end of this alternative will dictate the level of threat. Some provision should be made to monitor the overlying Qva aquifer for contamination from the sewer tunnel in either option.

During the construction phase for this route option, access portal #3 (figure 1-4 in summary section) will be constructed within the 5 year WHP zone. Sealing is critical to protect water quantity as well as to protect against contamination. A mitigation plan should be developed to define contingencies should the protections promised fail. Monitoring in proximity to the portal is the only reliable way to demonstrate that the sealing along the outside of the portal structure is effective.

D2-57 **Section 4.1.4.7 Route 9 Conveyance, 195th Corridor (Figure 4, Sheet 1 of 5)**
The force-main tunnel will pass within approximately 200 feet to the south of the OVWSD wellhead protection area at elevations between 125 below sea level and 100 feet above, west to east. This puts the highest elevation of the force-main tunnel 50 to 75 feet below the bottom of the Qva, cross gradient south of the WHPA and in Pre-Vashon transitional beds (Qtb). The precise elevation of the top of the Qtb is not known at this point and may be deeper than expected. The nature of the Qtb is interbedded layers of silt, fine sand and clay with sand often dominating the uppermost layers and clay usually more dominant in the deeper layers. It would be unwise to rely on the sediments of the upper Qtb as an inherent protection against groundwater contamination. The possibility of these sediments transmitting contaminated water exists.

The gravity tunnel averages approximately 200 feet deeper than the force main. This amount of separation and the fact that it will be in the deeper, clay-dominated facies of the Qtb make it significantly less likely that the conveyance would impact the Qva aquifer during construction, and there does not appear to be a threat from exfiltration during operation. Though the effluent passing through the tunnel is treated according to secondary standards, it can still pose a health risk. Some provision should be made to monitor the aquifer for sewage contamination.

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Response to Comment D2-56

King County agrees the 195th Street alignment does not pass through the Olympic View Water & Sewer District wellhead protection area for Deer Creek Spring, and this could be an advantage over other alignments. However, the tunnels for the other alignments would be constructed in a deeper aquifer that is hydraulically separated from the shallower aquifer that supplies Deer Creek Spring. Consequently, the other alignments are also not expected to impact this water source.

Response to Comment D2-57

Please refer to the response to the Comment D2-38 in this letter.

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D2-57 During the construction phase of this route, access Portal #23 will be constructed approximately 200 feet south of the WHPA. Protection of the aquifer during construction is essential to protect against both quantity and quality impacts.

D2-58 **Section 4.1.4.7 Route 9 Conveyance, 228th Corridor (Figure 5, Sheet 1 of 5)**
The force-main tunnel will pass under the OVWD WHPA at elevations between 50 feet below sea level and 200 feet above, west to east. At the tunnels shallowest point, which is within the 1 year WHP zone up-gradient from the spring, the tunnel is expected to intersect the Qva aquifer. As the tunnel progresses north to south toward the outfall area it crosses the 1 year WHP zone and passes through the bottom of the Qva. The gravity tunnel is at approximately sea level to 50 feet below sea level, beneath the WHPA, and will probably be placed in the lower portion of the Pre-Vashon transitional beds Qtb, approximately 150 feet below the bottom of the Qva at the tunnels shallowest point below the WHPA (northeast).

Both construction and operation of the force main potentially pose serious adverse impacts to the aquifer and should not be pursued. If a force-main option is pursued, extensive monitoring needs to be implemented and contingency plans to compensate the District for lost water resources should be in place with formal recognition by the county of its obligation to make the District whole should they impact the resource.

D2-59 During construction of either the force main or gravity main options, access Portals #22 and #24 will be excavated within and adjacent to the WHPA respectively. Mitigation plans and monitoring to assure that neither quantity nor quality impacts occur at Deer Creek Springs. Some assurances should be sought from County that they will compensate for damages should they occur.

D2-60 We have defined the relationship between tunnel options and the Qva aquifer using a cross section developed for the OVWSD WHPP study. If the Qva occurs at lower elevations south of the cross section line, then the tunnels may actually pass into the aquifer within the WHPA. Regardless of which option is undertaken, additional investigation, including additional test borings and water level monitoring, must be undertaken prior to the start of construction to accurately define the geologic and hydrogeologic conditions along that particular corridor. All efforts should be made to construct tunnels either well below the Qva or significantly outside of the WHPA. As soon as sufficient information is available better cross sections that emphasize the hydrogeology should be constructed and provided to the District for review. Current profiles in the DEIS are not suitable for addressing potential impacts to the groundwater resources.

D2-61 **Section 4.2.1.1 Construction Impacts – Groundwater Control and Dewatering, p. 4-31, Last Paragraph**
"Construction of some treatment plant structures will take place below the groundwater table, necessitating groundwater control during construction. Depending on the soil characteristics and construction methods, groundwater control may consist of pumping groundwater at volumes ranging from a few gallons per minute (gpm) to several thousand gpm."

No discussion is presented regarding how dewatering may affect the aquifer. The discussion of dewatering at these sites at possible rates of thousands of gallons per minute with a mere mention that this may disrupt flow to wells and springs is disturbingly cavalier. This level of dewatering can have regional affects on aquifers. To most people this would be a red flag worthy of exhaustive discussion as to why those reviewing the DEIS should not be alarmed. Here it is mentioned as if

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Response to Comment D2-58

Please refer to the response to Comment D2-38 in this letter.

Response to Comment D2-59

Please refer to the response to the Washington State Department of Ecology, Comment W5-9.

Response to Comment D2-60

Please refer to the response to the Washington State Department of Ecology, Comment W5-9.

Response to Comment D2-61

Additional subsurface data have been gathered and groundwater impact analyses specific to the plant sites have been conducted since the Draft EIS; these address the concerns you raise in this comment. Please refer to the response to Comment D2-4 of this letter.

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D2-61 insignificant. More attention is given to how the volumes of water might be disposed of and whether the water produced will have contamination issues that could complicate the construction of the project.

D2-62 **Section 4.2.1.1 Construction Impacts – Excavated Soil Reuse and Offsite Haul, p. 4-32, 2nd and 3rd Full Paragraphs**
The amount of excavation being discussed in this section is considerable. Excavation and building of a combined retaining wall 130 feet high at the Unocal site has implications of possibly rerouting discharge from the Deer Creek Springs and that is not discussed anywhere in the document. Major excavation in proximity to groundwater resources can be more disruptive to those systems than is recognized in the DEIS.

D2-63 **Section 4.2.1.1 Construction Impacts – Unocal Site, p. 4-33, 3rd and 5th Full Paragraphs**
"Permanent cut excavations of this magnitude and within the types of soil deposits located at the Unocal site would become unstable unless mitigated."

What geologic/hydrogeologic units will this permanent cut expose in the bank encounter? Will the Qva/Qtb boundary be exposed? Will this tend to enhance the efficiency of discharge at that point? What is the implication to Deer Creek Spring? These are obvious questions associated with this endeavor and they are not addressed.

D2-64 *"Unless dewatering is designed and conducted appropriately, the wetland could be impacted by drying and the railroad tracks by settlement."*

The DEIS does not discuss water budget impacts or long-term aquifer depletion issues.

D2-65 **Table 4-2 Summary of Potential Earth and Groundwater Impacts and Mitigation – Treatment Plant Sites, p. 4-34, 5th and 6th Rows**
There is no mention of construction practices that could cause contamination or the basic fact that they are handling sewage, which must be considered to be a potential source of groundwater contamination. This table, like many sections, appears more concerned with how existing contamination will affect the project and much less so with how the construction or operation of project might cause groundwater contamination.

D2-66 **Section 4.2.1.2 Operational Impacts – Soil and Groundwater Contamination, p. 4-36**
There is no evidence or argument given for the conclusion that the likelihood of a pipeline breaking and leaking is considered minimal. The Puget Sound region is seismically very active and studies have concluded that greater damage occurs in this particular region as a result of amplification of energy from smaller quakes because of the geometry of the sediment-filled Seattle basin. In the opening of this chapter (page 4-2) under Seismic Design Standards it states, "The UBS rates the Puget Sound region as a Seismic Zone 3, an area of moderate to high seismic risk."

D2-67 The subject of exfiltration is not addressed at all in this chapter. It appears that there is an underlying assumption that the pipes and conveyances will not leak. There is no technical or statistical evidence given to support such a position. In general, piping leaks. That is a fact of life regardless of what is being pushed through it. Most discussions of impact in similar EIS documents deal with how much is expected to leak, where it will go and what problems it will cause when it gets there. This DEIS has taken a position that this piping system will not leak but has not provided any evidence as to why this design is so reliable while all others are not.

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Response to Comment D2-62

The construction of the retaining wall systems at the Unocal site is not expected to change the groundwater regime in the area of the Unocal site. Please refer to the response to Comment D2-4 of this letter and to Appendix 6-B, Geology and Groundwater.

Response to Comment D2-63

The statement in the Draft EIS that you reference has since been clarified and revised for the Final EIS. The statement was intended to address why retaining walls will be needed at the Unocal site to support earth cuts versus unsupported cut-back slopes. No exposed cut-slopes are planned. A soldier pile lagging wall with permanent tie-backs will be used for the retaining wall system. This type of wall results in no exposed slope during construction and therefore, no adverse impacts to Deer Creek Spring are anticipated. Please refer to Appendix 6-B, Geology and Groundwater, of the Final EIS for more detail.

Response to Comment D2-64

Please refer to the response to Comment D2-4 in this letter for information on the groundwater impact analyses for the Unocal site. As noted, a combination of dewatering wells, tight sheet pile vertical barrier wall, and potentially surface water augmentation to the marsh is planned for construction dewatering at the Unocal site. This approach is expected to have no adverse impact on the water resources at, or adjacent to, the Unocal site.

Response to Comment D2-65

Please refer to the response to the Washington State Department of Ecology, Comment W5-43, and Appendix 6-B, Geology and Groundwater, of the Final EIS which discuss potential leakage from the treatment plant structures and the mitigation measures that are part of the design and operations of the facility to reduce this type of contamination to very

low risk levels. In addition, Chapter 4 and Appendix 6-B of the Final EIS describe design mitigation approaches to address potential contamination from the Brightwater System such as underdrain systems to monitor and control leaks from tanks should they occur, flexible couplings between pipes and structures to accommodate shaking that may occur during seismic events, spill containment pads around structures, and normal operations and maintenance procedures.

Response to Comment D2-66

Additional information on this topic is included in Chapters 4 and 6, and Appendix 6-B, Geology and Groundwater, of the Final EIS. The Puget Lowland, in which the project area is located, is seismically active. However, seismic activity does not necessarily mean that a pipeline will "break and leak." Experience in western Washington and other parts of the United States has shown that earthquake ground shaking does not result in structural damage to tunnels that are constructed with the tunnel lining in continuous contact with the surrounding ground. Damage to tunnel linings is a valid concern where the tunnel crosses a fault plane along which differential movement occurs during an earthquake. In the event that the Brightwater tunnels would cross such a fault, the lining would be designed with enough ductility to withstand some deformation without structural failure. Any damage to the lining (after such an event) which would create leakage (but not failure) would be repaired. Damage to tunnels can also occur where they cross loose materials subject to liquefaction and settlement. The pipeline will be specifically designed to handle liquefaction or settlement loads in areas subject to these conditions.

Response to Comment D2-67

The proposed lining system described in the Final EIS will control infiltration/exfiltration in the tunnel. Please refer to Appendix 6-B, Geology and Groundwater, of the Final EIS.

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Section 4.2.2.1 Conveyance Corridors – Construction Impacts, p. 4-37, 2nd and 3rd Paragraphs
"It should be noted that these tables represent worst-case impact characterizations indicated by the type of impact that could occur, but would not necessarily occur."

D2-68 All of the corridors and conveyance options have significant potential to harm the regional aquifers, and yet these impacts are given very little discussion and no proper definition within the impact section of this chapter. How will the tunnels be sealed to assure that no preferential transfer routes are created along the outside of the portal and tunnel structures? This is not as easy as one might think. How does the proponent propose to know if the sealing is effective? There is no discussion of a water level monitoring plan.

D2-69 **Sensitive Area Impacts**
There is no mention of wellhead protection areas. These are recognized sensitive areas and they exist within or near the project regardless of the option selected.

D2-70 **Table 4-3 Summary of Potential Impacts by Corridor, p. 4-38, 2nd and 3rd Rows**
The amount of possible dewatering indicated is very high. Such dewatering values cannot credibly be put into a table such as this and then ignored in the impact analysis. Without better specific definition of the groundwater resources in a given area and a meaningful analysis of hydraulic responses of those aquifers to the proposed dewatering, it is impossible to discuss the level of impact that this endeavor will impose. All of the alternatives have substantial potential to harm the aquifers, whether we are discussing the Deer Creek Springs to the west or the Cross Valley Aquifer to the east. This aspect of the DEIS is not adequate to know the level of impact, however, the fact that an impact will occur at these levels of dewatering is certain.

D2-71 **Section 4.2.2.1 Construction Impacts – Groundwater Control and Dewatering, p. 4-39, 2nd Paragraph**
"Disposal of large volumes of dewatering discharge will require coordination with local jurisdictions; groundwater containing high concentrations of sediment or contaminants would require special disposal methods."

Impact to springs and wells is given little mention here but is a primary concern. Again, the focus appears to be on how the dewatering will affect the project rather than on how it will impact the aquifers. This tendency suggests the focus of this chapter was feasibility of the project, not an analysis of the environmental impacts.

D2-72 **Table 4-4 Summary of Potential Dewatering Impacts and Mitigation by Portal Site Area, p. 4-40**
This table indicates that the spring flow will be reduced at Deer Creek Spring and discusses methods of disposal of dewatering discharge water. It would seem practical to investigate use of the dewatering water by the purveyors whose sources might be impacted.

D2-73 **Section 4.2.2.1 Construction Impacts – Table 4-4, pp. 4-40 through 4-44**
For portal sites 3, 22, 23, and 24, under Portal-Specific Impacts During Construction: "Lowering pumping levels in wells" should include potential reduction of flow from Deer Creek Spring. Also (on page 4-42) for 228th Street Tunnel, Portal #23 should be number 22 (Portal #23 applies to 195th corridor) and Portal #24 should be included with the 228th Street tunnel. Other numbers are mixed up as well (i.e. for 228th tunnel, Portal #26 is associated with Olympic View Water and Sewer

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Response to Comment D2-68

Please refer to the response to the Washington State Department of Ecology, Comment W5-9.

Response to Comment D2-69

Wellhead protection areas have been added to the Sensitive Areas Impacts section.

Response to Comment D2-70

Additional subsurface data gathering and groundwater impact analyses specific to the conveyance corridors and plant sites have been conducted since the Draft EIS; these address your concerns. Please refer to the responses to the Washington State Department of Ecology, Comments W5-9 and W5-15.

Response to Comment D2-71

Additional subsurface data gathering and groundwater impact analyses specific to the conveyance corridors and plant sites have been conducted since the Draft EIS; these address your concerns. Please refer to the responses to the Washington State Department of Ecology, Comments W5-9, W5-15 and W5-40. Additional detail is provided in Appendix 6-B, Geology and Groundwater.

Response to Comment D2-72

King County agrees it would be practical to evaluate use of water removed from portals by local water purveyors. This concept is included in Appendix 6-F, Groundwater and Stormwater Management at the Candidate Portal Sites, of the Final EIS.

Response to Comment D2-73

The Final EIS text in Chapter 6 has been updated to reflect a reduction in the number of primary portal locations, and the portal numbers have been corrected as indicated in the comment. King County will coordinate with local purveyors

and other potentially affected jurisdictions or agencies regarding the use/disposal of dewatering flows.

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D2-73 District and for the 228th Street force main, Portal #26 is associated with Alderwood Water District.

D2-74 The only mitigation listed in this table focuses on how to dewater (mitigating to improve construction effort). There is no mention of mitigating for impacts from dewatering (i.e. reduction of pumping levels in wells or flow to springs), which is mentioned as an impact on page 4-39 first paragraph of Groundwater Control and Dewatering. Possible mitigation to OVWSD should, at a minimum, include monitoring of water and flow levels and contingency plans to augment lost flow volume at the Deer Creek facility or reduction of the District's ability to exercise its 228th Street water right.

D2-75 **Section 4.2.2.2 Operational Impacts – Impacts Common to All Corridors: Groundwater Contamination, p. 4-45**
The potential for aquifer contamination due to exfiltration needs to be discussed here. This should include the nature of potential contaminants, transport characteristics of those contaminants and an estimate of concentrations that might reach regional water sources.

D2-76 **Section 4.2.2.2 Operational Impacts – Groundwater Contamination, p. 4-45, 5th Paragraph**
"Large-scale breakage of a pressurized conveyance system (i.e. the force main options) could result in discharge of wastewater influent or treated effluent into the shallow aquifer and possible contamination of domestic and Group A (municipal) water supply wells. The likelihood of the pipeline or tunnel breaking or leaking appears minimal, but could result from movement on an unknown fault that might intersect tunnel alignment."

Knowing it is broken is hardly mitigation. Saying it is unlikely does not excuse the need for contingency plans. No such plans are discussed. No monitoring program to alert water users to a contamination event is proposed. This is such a potentially devastating event that low probability is hardly a comforting aspect. No presence of an influent force main of this size within an aquifer used for potable water to serve communities can be justified. This conveyance and any associated options should be removed from consideration.

D2-77 **Table 4-5. Tunneling Methods and Impacts, p. 4-47, 1st and 2nd Rows**
"Up to > 0.25 acres impacted by construction…"

Internally, this is a contradictory statement. Is it "up to" or "greater than"? It cannot be both.

What type of fuel is used by the tunneling machines; is it piped to the face or brought in by container? What amount of fuel is the greatest possible contamination event going to introduce (possibly directly into an aquifer)? How will the possibility of a spill be minimized? What contingency plans are to be in place and how quickly can they be implemented? BMPs in such unique circumstances must be spelled out not just alluded to.

D2-78 **Section 4.3.1.1 Mitigation Measures – Construction, Unocal Site, p. 4-54, 2nd Paragraph of Section**
"Permanent cut excavations of up to 130 feet are required to regrade the Unocal site to desired operating elevation."

What about groundwater interception by the cut? Has any analysis been accomplished that shows the affect of exposing the geologic contacts that form the springs? It appears that the excavation of the face will occur at elevations that may have implications to the Deer Creek Springs. If the face

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Response to Comment D2-74

The table now provides additional mitigation elements, termed precautionary measures, in Chapter 6 of the Final EIS. Results of the groundwater analysis, as described in Appendix 6-B, Geology and Groundwater, if the Final EIS show no specific need for mitigation in this area.

Response to Comment D2-75

King County agrees the potential for contamination of the aquifer due to exfiltration should be discussed. However, the degree of discussion suggested in the comment is not necessary, because King County will be designing the tunnel lining to effectively eliminate leakage in those portions of the tunnel where external groundwater pressures are less than internal hydraulic pressures. This topic is also discussed in Appendix 6-B, Geology and Groundwater, of the Final EIS.

Response to Comment D2-76

The statement in the Draft EIS, "The likelihood of the pipeline or tunnel breaking or leaking appears minimal, but could result from movement on an unknown fault that might intersect tunnel alignments," was intended to be a conservative statement. However, because of comments about the issue, King County conducted further evaluations of the potential for faulting in conjunction with the Seattle Geologic Mapping Project and the United States Geological Survey, as described in Appendix 6-B, Geology and Groundwater, of the Final EIS. Preliminary findings are as follows:

The U.S. Geological Survey (USGS) has been investigating an aeromagnetic lineament or anomaly that passes near the proposed Brightwater Treatment Plant site on Route 9 and has developed field evidence showing the aeromagnetic linement is related to local variations in topography. Field inspections by one of the USGS geologists, who is lead on

many local crustal fault investigations, showed evidence of a crustal fault.

The magnetic anomaly is defined from Radar Lake in eastern King County to Little Bear Creek in Snohomish County. The anomaly passes just north of the northern end of the Route 9 site. Local changes in elevation are offset from the magnetic anomaly by 100 or more meters. In several places, the elevation change has the look of an active fault scarp. The offset between the physical feature on the ground and the underlying magnetic anomaly is similar to that seen along the Seattle fault in Bellevue.

One possibility is that the scarp identified in the field may be related to the South Whidbey Island fault. A second is that the scarp may be an older feature that provides the structural control for the Cross Valley Aquifer. In any event, the USGS is continuing to work to provide as complete an understanding of the data as possible.

A contingency plan addressing unlikely events will be included in the conveyance system inspection regime. The plan will include monitoring for changes in flow and undertaking an inspection of the conveyance system after the occurrence of any major seismic event outside of the tunnel design parameters, either a higher than anticipated level of ground shaking or movement along a previously unknown fault crossing the alignment. The plan will also include actions to mitigate potential impacts of any damage until permanent repairs can be completed.

Response to Comment D2-77

The typographical error has been corrected in the Final EIS. The correct wording is "…up to 0.25 acre…." The tunnel boring machines are powered by electricity. There will be no fuels inside the tunnel.

Response to Comment D2-78

An additional hydrogeotechnical investigation was commissioned after the publication of the Draft EIS to examine these potential risks and the appropriate control methods that could be implemented. The results of the study are detailed in Appendices 6-B, Geology and Groundwater, and 6-C, Management of Water Quality During Construction at the Treatment Plant Sites, of the Final EIS.

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D2-78 exposes the spring contact, and preferentially escorts water from behind the wall, the result could be that water that would otherwise have flowed to the spring will flow to the cut instead. That possibility is not recognized or dealt with in the DEIS.

D2-79 **Section 4.3.1.2 Operational – High Groundwater Levels, p. 4-55, 1st Paragraph of Section**
"The presence of high groundwater elevations at the treatment plant sites could result in hydrostatic uplift pressures at the base of the structure that, if not resisted by downward forces, could result in cracking of the structure and leakage."

There is too much discussion about groundwater affecting the project. What about the project affecting groundwater?

D2-80 **Section 4.3.2.1 Construction – Mitigation Measures Common to All Corridors: Soil and Groundwater Contamination, p. 4-58**
Mitigation should include monitoring water quality of the Qva at a minimum in the OVWSD WHPA and at the spring itself. Monitoring of water quality along the entire length of any conveyance is the prudent way to approach this issue. There is no discussion of monitoring, how it might be accomplished or what protocols would be followed.

D2-81 **Section 4.3.2.1 Conveyance Corridors / Construction – Soils and Groundwater Contamination, p. 4-58, 2nd and 3rd Paragraphs**
"The construction contractor would be required to apply BMPs at all construction sites, thereby reducing the risk of spills and minimizing the effects of spills that do occur."

This acknowledges a serious possibility, but does not assure that it will be effectively dealt with. For discussion of the project contaminating the environment, we are offered a simple "BMPs will be required." This is followed by a full page of what will be done to deal with contamination adversely affecting the project. The focus is that of a feasibility study, not an EIS. Some elaboration or a reference to show BMPs exist is needed here at a minimum. It is appropriate that specific BMPs be presented and discussed so that their effectiveness can be determined. This is a poor place to depend on unsupported reference to what others have done. It is an uncomfortable place to suggest trust in unnamed technology that has not been utilized in this setting with any regularity.

D2-82 *"Mitigation would include compliance with hazardous waste regulations and standard procedures, such as conducting environmental site assessments and hazardous material surveys prior to right-of-way acquisition or construction of pipeline segments to determine the nature and extent of contamination…"*

This statement is about the impact that contamination may have on the project. Where is the analysis and discussion of the implications to the water resources of the region?

D2-83 **Section 4.3.2.1 Conveyance Corridors / Construction – Groundwater Control and Dewatering, p. 4-59, 1st Paragraph of Section**
"Modern construction and tunneling technologies could substantially reduce the volume of construction dewatering required. Some type of relatively watertight construction method (i.e. ground freezing, slurry walls, soil mixing, secant pile walls…) would be used at the portals to minimize or eliminate the need to dewater prior to and during excavation, as well as prevent the infiltration of groundwater into the finished portal and tunnel. In addition, closed face tunnel

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Response to Comment D2-79

The groundwater impact analyses detailed in Appendix 6-B, Geology and Groundwater, and summarized in Chapter 6 of the Final EIS provide the information you are requesting. The potential effect to the groundwater regime from the long-term operations of underdrains beneath structures that are designed to relieve hydrostatic uplift pressures from the groundwater. The underdrain flow is planned to be re-infiltrated to the near surface aquifer in wetlands constructed onsite. This underdrain and re-infiltration approach will result in no significant adverse effects to the groundwater regime or to surface water features.

Response to Comment D2-80

Please refer to the responses to the Washington State Department of Ecology, Comments W5-9 and W5-15.

Response to Comment D2-81

Chapter 6 of the Final EIS provides additional detail on the requirements for minimizing the risk of spills. Specifically, a spill prevention and control plan will be required along with a stormwater pollution prevention plan (SWPPP) to guide management of construction chemicals and procedures for responding to spills, should they occur. Appendix 6-B, Geology and Groundwater, of the Final EIS, provides additional detail on potential impacts of the conveyance system on groundwater, to balance the existing discussion of potential hazardous material impacts on the project.

Response to Comment D2-82

Please refer to the response to Comment D2-81 in this letter.

Response to Comment D2-83

Details on the conveyance construction approach, including standard sealing procedures between the outside of the tunnel lining and the surrounding soil, are contained in Appendices 3-B, Project Description: Conveyance, and 6-B, Geology and

Groundwater, of the Final EIS. Standard tunnel construction procedures will result in the annulus space around the exterior of the tunnel being sealed with concrete grout. Please refer to the response to the Washington State Department of Ecology, Comment W5-9, for a summary of the information contained in Appendix 6-B relative to the conveyance construction and leakage analyses.

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boring machines installing sealed and lined tunnel segments would preclude groundwater from leaking into the tunnel along the corridor."

D2-83 The discussion of sealing here appears to be concerned only with sealing the inside of the tunnel from the outside of the tunnel. Such thinking does not address concerns regarding the potential to create more permeable material immediately outside the tunnel structure which could drain the groundwater systems. It is essential that all disturbed materials outside the tunnel be sealed such that no avenue for preferential flow is created along the tunnel. This is equally or perhaps even more important with regard to the portals. Without such protection, the aquifers could be drained over time and significant diminishment of the regional groundwater sources could occur. These effects could impact aquifers distant from the plant and conveyance sites. Hydrogeologic analyses of these potentials have not been accomplished. The affects of aquifer draining would also seriously change the base flows of the streams that are currently generated by discharge from these aquifers. The proper and verified sealing of the conveyance structures is imperative to the protection of the aquifer flow and the groundwater quantity of the region. This does not seem to be fully appreciated nor adequately studied in the DEIS effort.

Section 4.4 Significant Unavoidable Adverse Impacts, p. 4-64
"Design and construction of the Brightwater treatment, conveyance and outfall facilities will incorporate measures to avoid or minimize geologic hazards and to minimize construction and operational impacts on soil, sediment, and groundwater to the maximum extent practicable. No significant unavoidable adverse impacts to earth and groundwater resources are expected to result from construction or operation of the Brightwater Treatment Plant. "

D2-84 This is an extremely broad statement for a project of this nature and size. It seems naïve to believe no significant unavoidable impacts will occur. Dewatering is very likely to be necessary by all that is written here, and the aquifers involved are acknowledged to be regional water supply sources. How can the investigators involved in the Earth and Groundwater chapter realistically reach a conclusion that there will be no significant unavoidable impact? There has been no quantification of dewatering, much less any analysis of the hydraulic or water budget responses of the dewatered systems. The document concludes that a seismic event could sever the conveyances and that the area is prone to seismic activity. The project is recognized as having the possibility of "lowering water levels in wells" and "diminishing flows at springs as a result of dewatering. It also acknowledges that continuous dewatering may be required to stabilize sites. Nothing in this chapter indicates how such impacts will be avoided save the occasional reference to the application of BMPs. This statement of no unavoidable adverse impacts is, at best, an assumption.

Chapter 5: Air
D2-85 The level of impact analysis presented in this chapter is appreciably more detailed and scientifically accomplished than that of Chapter 4. There is no information within the chapter that is pertinent to the water resources of the area or to evaluating the potential impacts to those resources.

Chapter 6: Surface Water
D2-86 Chapter 6 does not address the springs located at Deer Creek. An average of 40% of Olympic View Water and Sewer District's water is collected at Deer Creek springs. Two possible conveyance tunnels are planned to be constructed within the 1 year travel time for the springs as

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Response to Comment D2-84

As noted in several responses to prior comments in this letter, additional subsurface data gathering, geotechnical laboratory testing, geologic interpretation, and groundwater impact analyses specific to the construction and operations of the proposed Brightwater System have been conducted since the Draft EIS. This information and analyses is presented in Appendix 6-B, Geology and Groundwater, and summarized in Chapter 6 of the Final EIS. It is further summarized in the response to the Washington State Department of Ecology, Comments W5-9, for conveyance analyses, and in the response to Comment D2-4 of this letter for treatment plant sites. This information indicates that no significant adverse impacts to earth and water resources are expected as a result of the construction and operations of the Brightwater System.

Response to Comment D2-85

Thank you for your comment.

Response to Comment D2-86

Thank you for your comment.

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determined by the WHP (1999). Diminishment of the springs will diminish surface water flow in Deer Creek which has implications to riparian habitat. This aspect of project impacts is a surface water/groundwater issue. It should be discussed in its surface water context in this chapter but is not.

D2-86 Several issues need to be addressed if the Unocal conveyance or the Route 9 site 228th Street conveyance are considered. (Our conclusion is that the Unocal influent conveyances carry significant risk and should, therefore, be dropped from further consideration.)

D2-87
- Dewatering – Both the construction of the tunnels and the access portals require dewatering to allow construction to be completed. What steps have been implemented to insure OVWD that supplies associated with the Deer Creek spring will not be interrupted and Deer Creek itself harmed?

D2-88
- Draining of the Aquifer – Close attention should be planned to the location and depth of the conveyance tunnels as they approach the Deer Creek springs. Potentially the tunnels may penetrate the underlying confining unit, thus providing a drain reducing or eliminating the flow at Deer Creek or the base flows of other streams in the region. Lake Ballinger and related drainage are also at risk from diminished groundwater discharge to them. That aspect of dewatering, whether planned or unplanned, must be considered as a potentially significant regional impact of the project.

D2-89
- Reapplication of the Water Generated during Dewatering – This is a concern. No consideration has been made to protect the surface water which contributes to the springs associated with Deer Creek.

D2-90
- Selection of Any of the Three Conveyance Alternatives – This would require more data regarding the final locations of dewatering projects as well as the amounts of water to be removed. It is also necessary to perform at least speculative analyses of the impacts to base flow if dewatering is required or in scenarios where substantial leakage occurs along poorly sealed conveyance structures. The potential affects on streams and habitat from diminished base flow does not appear to have been analyzed even in a conceptual manner.

D2-91
- Dewatering Project Timing – Timing of these dewatering projects is also critical; water levels fluctuate significantly throughout the course of the year, so several alternatives may have to be implemented to deal with the changing seasons.

D2-92 **Section 6.2.2.1 Treatment Plant Sites – Construction Impacts – Dewatering, p. 6-22, 2nd Paragraph**
"King County's Industrial Wastewater Program has established a maximum volume allowed for discharge to the sanitary sewer of 25,000 gallons per day (equivalent to 17 gpm or 0.04 cfs)."

The quantities discussed here are no where near those indicated elsewhere. A few gpm into sewer is hardly worth mentioning yet it constitutes most of the discussion. There is no indication as to which receiving sewer plants were contacted or what responses were received with regard to capacity.

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Response to Comment D2-87

Appendix 6-B, Geology and Groundwater, of the Final EIS addresses potential impacts to the Deer Creek Spring and Deer Creek by the Brightwater facilities and proposed conveyance routes. Potential impacts caused by construction dewatering will be mitigated by the use of construction techniques that minimize dewatering and actual impacts to local water bodies.

Response to Comment D2-88

Potential risks of the aquifer being adversely impacted at both the treatment plant sites and along the conveyance routes have been analyzed and are included in Chapter 6 and Appendix 6-B, Geology and Groundwater, of the Final EIS. The groundwater impact analyses indicate that no significant adverse effects to water resources are expected as a result of construction and operations of the Brightwater System.

Response to Comment D2-89

Consideration is being given to all surface water features during construction. Please refer to the Final EIS Appendix 6-F, Groundwater and Stormwater Management at the Candidate Portal Sites, for a discussion of the potential impacts with managing groundwater at the portals.

Response to Comment D2-90

All analyses that suggested have been conducted as part of the Final EIS and are summarized in Appendix 6-B, Geology and Groundwater, of the Final EIS. These analyses indicate that standard construction and design procedures are expected to result in no significant adverse environmental impacts to water resources as a result of the construction and operations of the Brightwater System.

Response to Comment D2-91

It is acknowledged that groundwater fluctuates seasonally with time. The groundwater impact analyses were conducted

considering the groundwater level data collected to date. For many wells only a few months of data exists. However, the existing data is sufficient to evaluate the alternatives of this Final EIS. In addition, after the final alternative is selected, the groundwater impact analyses will be refined as part of design, including pumping tests to refine aquifer properties. At that time, the additional groundwater level data will be used to evaluate seasonality effects. Please note that the groundwater dewatering data presented in Appendix 6-B, Geology and Groundwater, of the Final EIS, does consider the yearly construction schedules and this information has been considered in evaluating what methods can be used to discharge the dewatering flows (i.e., dry season versus wet season).

Response to Comment D2-92

Seasonal groundwater fluctuations will be considered in the design and operation of all dewatering systems.

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D2-93 *"Dewatering discharge injected into aquifer recharge wells would comply with Ecology requirements."*

Recharge Wells are sufficiently complicated to require some discussion of how they would be accomplished and why they are considered feasible in the context of this hydrogeologic setting.

D2-94 **Section 6.3.1.1 Mitigation Measures – Best Management Practices – Dewatering,**
There is no mention here of correcting stream base flows that will be diminished by dewatering. Even BMPs and following requirements do not eliminate this inherent impact.

Chapter 7: Plants, Animals, and Wetlands
As the name implies, the focus of this chapter is the impact of the proposed project on terrestrial and aquatic habitats. Detailed descriptions of the vegetation cover, habitat, and animals present (terrestrial and aquatic) at the Unocal and Route 9 Sites, conveyance corridors, portal siting areas, and outfall zones are provided as are descriptions of potential impacts, mitigation measures, and significant unavoidable impacts.

D2-95 The identified permanent "impacts" to habitats and wetlands are generally due to the presence of the treatment plant site or other impermeable surfaces. Depending upon the geology and location, such impermeable surfaces may have some impact on recharge to the groundwater system by decreasing infiltration of precipitation and increasing the amount of stormwater routed away from the site.

D2-96 Many of the wetlands in Tables 7-2 and 7-3 list groundwater as a primary water source, suggesting the wetlands are discharge sites. However, many of these sites may, in fact, be recharge locations. Although wetland mitigation is proposed (between 1:1 and 1:1.25 mitigation ratios), the potential recharge function of the wetlands (original or man-made) is not addressed in this chapter.

D2-97 **Section 7.2.2.1 Construction Impacts—Impacts Common to Both Sites: Accidental and Incidental Discharge of Pollutants, pp. 7-55 and 7-56**
This section indicates that "incidental, incremental, or accidental discharge of pollutants, such as fuel, oil, grease, and hydraulic fluid" may occur with the use of construction equipment. The potential impacts to surface waters (streams, wetlands, etc.) and habitats are addressed (as expected given the chapter), but no discussion of potential impacts to groundwater sources are discussed. The issue raised here is not discussed in any detail in the surface water discussion (Chapter 6) or the Earth and Groundwater discussion (Chapter 4)

D2-98 **Section 7.2.2.1 Construction Impacts— Impacts Common to Both Sites: Removal and Discharge of Dewatering Water, p. 7-56, 3rd Full Paragraph**
"The amount of groundwater requiring removal would vary depending on the depth of the excavation, and the presence or absence of shallow unconfined aquifers, deep confined aquifers, or bedrock."

From brief review of Chapter 4 and discussion with colleagues, it would appear that the preparers of the DEIS have very limited knowledge of the subsurface geology of the area. While the above statement is true, one is left wondering whether the order-of-magnitude estimates of dewatering quantities (Chapter 4, Table 4-4) are reasonable.

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Response to Comment D2-93

Using injection wells is no longer being considered as a means to dispose of dewatering flow. After more detailed analyses, re-infiltration, or direct discharge to Little Bear Creek after any necessary treatment, are both viable options for the anticipated dewatering flow of 350 gallons per minute during construction at the Route 9 site. Please refer to Chapter 6 of the Final EIS for greater detail on dewatering flow management.

Response to Comment D2-94

The additional groundwater impact analyses and dewatering discharge management approaches, as described in the Final EIS, consider stream base flows that may have been affected by dewatering and in many cases re-introduction of dewatering flow into the stream is considered. Please refer to Chapter 6 of the Final EIS for a summary of this interaction between groundwater and surface water.

Response to Comment D2-95

Thank you for your comment.

Response to Comment D2-96

Appendices 7-B, Route 9 Site Sensitive Areas Technical Report, and 7-C, Unocal Site Sensitive Areas Technical Report, of the Final EIS provide a functional assessment of wetlands on the treatment plant sites. Chapter 7 of the Final EIS also discusses wetlands in candidate portal sites. These evaluations recognize the function of wetlands in providing base flow to streams and other surface waters through subsurface connections with shallow groundwater layers.

Response to Comment D2-97

Potential construction impacts to groundwater resources from chemical spills are now discussed in Appendix 6-B, Geology and Groundwater, and Chapter 4 of the Final EIS. For a summary of the construction contamination evaluation,

please refer to the response to the Washington State Department of Ecology, Comment W5-43.

Response to Comment D2-98

Please refer to the response to the Comment D2-4 in this letter that provides a summary of the geologic interpretations at the two plant sites and the groundwater impact analyses conducted since the Draft EIS. Additional detail is provided in Appendix 6-B, Geology and Groundwater, of the Final EIS.

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D2-99 *"The option of freezing groundwater to reduce the amount of dewatering will be employed where feasible."*

Given the previous comment, one wonders whether or not the DEIS preparers have sufficient information to determine whether groundwater freezing is technically feasible.

D2-100 **Section 7.3.1.1 Mitigation Measures Common to Both Sites, p. 7-101, 3rd Bullet**
"Implement a Dewatering Plan that will be developed during pre-design after more field studies have been conducted (see Chapters 6 and 4, for more details regarding dewatering)."

What types of studies will be performed? When will these studies be done? No real discussion of dewatering techniques, timing or magnitude is offered in either Chapter 4 or Chapter 6.

D2-101 **Section 7.3.1.1 Construction Mitigation Measures Common to Both Sites, p. 7-101, 6th bullet**
"Ensure that tunnel boring occurs at adequate depths below surface waters to avoid or minimize the opportunity for slurry materials reaching surface waters, as described in Chapters 3 and 6."

No mention is made of the potential for slurry materials to contaminate aquifers. If flow velocities in the groundwater system are sufficiently low and tunneling is done at sufficient distance from production wells, this may be a minor issue. However, tunneling in proximity to production wells could disturb the formation and causing sanding or other concerns. Although the distribution of material would be very different from drilling mud contaminating a formation, could the slurry material impact production?

D2-102 **Section 7.3.2.1 Operational Mitigation Measures Common to Both Sites, p. 7-102, Final Paragraph**
"The impacts of increased impervious surface within treatment plant, pump station, and portal sites would be offset by . . . using permeable materials for roads and parking areas . . . ."

We understand that permeable concrete provides some treatment/filtration to the infiltrating water, however we have never seen this effect quantified in any way. Are there any potential water quality concerns regarding infiltrated water?

Chapter 8: Energy and Natural Resources

D2-103 **Unocal Site, p. 8-14, 5th Paragraph, Line 5** *"The [power] transmission line to the Unocal site may be installed underground, due to space limitations at the site and requirements imposed by the cities of Edmonds and Woodway."*

Tunneling will not be limited to only inflow and outflow from the plant, but also utilities including power and gas. The impact of tunneling on groundwater resources needs to be addressed for this and other underground conveyances. Tunnels are more difficult to service than trenched conveyances in the advent of an emergency. As mentioned in previous sections tunnels can breach natural groundwater barriers, both vertical and lateral features, which would normally retard groundwater flow.

Chapter 9: Environmental Health

D2-104 As with Chapter 6, the Springs located at Deer Creek were omitted from discussion.

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Response to Comment D2-99

Since the Draft EIS, and in consideration of additional subsurface information and a more detailed definition of the project, the most likely construction methods have also been refined for this Final EIS. If used, ground freezing as a means to limit groundwater flow into excavations will likely be limited to the base of portal excavations to stabilize the base while the bottom slab is being poured. Grout/soil plugs are also being considered to stabilize the base of portal excavations. These construction methods are described in Appendix 6-B, Geology and Groundwater, of the Final EIS.

Response to Comment D2-100

New evaluations on dewatering volumes, locations, and discharge strategies, are provided in Chapter 6 of the Final EIS. Updated estimates of dewatering volumes have been developed for the primary portal sites and treatment plant sites, and they discuss specific disposal options for each site, incorporating new information such as streamflow characteristics. All discharges to surface waters would comply with applicable state Water Quality and Sediment Management Standards. Discharges would also be guided by the recommendations established by the Washington State Department of Ecology to protect the chemical, biological, and physical characteristics of streams. The guidelines recommend that the discharge rate not exceed 10 percent of the flow rate of the receiving water body at any time. If dewatering rates to streams are in any case greater than the 10 percent guideline, an additional study would be conducted. During dewatering, water levels in adjacent wetlands and flows in streams would also be monitored, where appropriate, to determine if dewatering or dewatering discharge is adversely affecting these resources. Further detail can also be found in Appendices 6-B, Geology and Groundwater, 6-C, Management of Water Quality During construction at the Treatment Plant Sites, 6-D, Permanent Stormwater Management at the Treatment Plant Sites, and 6-F,

Groundwater and Stormwater Management at the Candidate Portal Sites, of the Final EIS.

During pre-design of the selected alternative, likely the middle of 2004, groundwater pump tests will be conducted as needed to provide data on aquifer properties and to gather information for the construction contractors to bid on and to design their groundwater dewatering systems. The locations and numbers of pump tests to be conducted have not yet been determined and are related to the alternative selected. It is likely that for the selected conveyance corridor, pump tests may be conducted at each portal location.

Response to Comment D2-101

The issue of aquifer contamination during tunneling and portal construction is discussed in detail in Appendix 6-B, Geology and Groundwater, and Chapter 6 of the Final EIS.

Response to Comment D2-102

For infiltration basins infiltrating untreated stormwater, there could be water quality concerns for soils with infiltration rates greater than 2 inches per hour. The Washington State Department of Ecology's (Ecology) *Stormwater Management Manual for Western Washington* (August 2001) recommends the use of a layer of amended soils in this situation. Permeable pavement is a somewhat different form of infiltration in that the pavement only infiltrates the rain falling directly upon its surface. The pavement, therefore, has a much lower hydraulic loading than a typical infiltration basin. Preliminary research indicates that there is substantial removal of pollutants occurring within the pavement and the gravel and sand layers beneath the pavement. A study in England documented removal of oil and grease in the drainage collected underneath permeable pavement (Newman, A.P., and others. 2002. *Oil Retention and Microbial Activity in Porous Pavement Structures*. Coventry University, England). A long-term study of permeable pavement parking stalls by the University of Washington has also noted reduction in nutrients in runoff collected from the underdrains.

With regard to permeable pavement and water quality treatment, the project would take into account the guidelines in Ecology's *Stormwater Management Manual for Western Washington*. If the native soils upon which permeable pavement are placed have an infiltration rate of greater than two inches per hour; a treatment layer of amended soils would be placed below the pavement's gravel base to assure adequate water quality treatment of the percolating runoff.

Response to Comment D2-103

Unlike tunneling for the inflow and outflow from the plant, underground utilities would be installed using shallow trenching. This would involve modification of a shallow layer below the ground surface and would not substantially affect groundwater. It is rare for shallow utility trenches to have a significant effect on regional aquifers. This topic is, therefore, not discussed in the Final EIS. Please refer to the response to the Comment D2-104 in this letter.

Response to Comment D2-104

Impacts to the Olympic View Water & Sewer District, including Deer Creek Spring, are addressed in more detail in Chapter 6 and Appendix 6-B, Geology and Groundwater, of the Final EIS. It is recognized that this is the primary water source for Olympic View Water & Sewer District. The springs produce water from the Qva aquifer; the analysis of impacts to the aquifer system supplying the springs showed non-measurable drawdowns in the Qva aquifer, supplying the springs for the expected case, and up to a few inches for the worst-case type analysis. Excavation at greater depths within the underlying Qu aquifers is likely to result in greater drawdown, but drawdowns in these deeper aquifers are not likely to substantially affect Deer Creek Spring.

For the 228th Street wells, groundwater removal during construction of tunnels could cause temporary declines in Qu aquifer water levels, although they should be negligible for the expected conditions. Under the upper-bounds analysis, localized declines of up to 9 feet have been estimated along the axis of the 195th Street alignment within the Olympic View Water & Sewer District area; similar declines would be expected along the 228th Street alignment. Infiltration into effluent tunnels during operation of the conveyance system could induce more permanent declines in the Qu Aquifer of generally less than 1 foot for

the expected case. The analysis shows maximum declines of up to 4.8 feet.

No adverse water quality impacts are expected during either construction or operation of the conveyance system. During construction, groundwater will seep into the tunnel under hydraulic pressure, preventing any contaminants that might be present in the tunnel from migrating outward. During operation, the net hydraulic gradient will also be inward, preventing effluent from migrating outward. Please refer to Chapter 6 for more discussion of potential construction and operation impacts on groundwater resources.

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Two separate conveyance alternatives the Unocal influent tunnel as well as the 228th street effluent tunnel are proposed to pass within 5,000 feet of the Deer Creek springs, well within the 1 year travel time determined during the 1999 WHP.

Potential Release:

- During construction special consideration should be made to minimize release within the WHP area associated with the Deer Creek spring. The potential for leaks to impact the spring is dependent on the final depth of the conveyance tunnels. Any tunneling within the sands associated with the spring would increase the potential for a harmful release. Concerns would be appreciably grater if the Unocal Alternative is selected.

- Construction of the above mentioned alternatives also passes within close proximity to the OVWD wells located at the 228th street well field. Dewatering and the potential release of untreated or even treated waste water could impact the well at this location. No discussion has been noted within the text of DEIS.

D2-104

Chapter 10: Noise and Vibration
No information in this chapter was found to be pertinent to water resources nor to have bearing on other issues raised with regard to the District's interests.

D2-105

Chapter 11: Land Use and Shoreline
Though we found nothing in this chapter related to the water resource interests of the District, there are matters in which the District plays a cooperative role in the community that are discussed. It is suggested that the District review this Chapter with an eye toward issues that it deals with on a community level.

D2-106

Chapter 12: Aesthetics
No water resource related issues are raised in this chapter. However, as with Chapter 11, there may be matters that involve the District as members of the affected community.

Chapter 13: Light and Glare
No pertinent information regarding water resources is presented in this chapter.

Chapter 14: Recreation
No pertinent information regarding water resources is presented in this chapter.

Chapter 15: Cultural Resources
No pertinent information regarding water resources is presented in this chapter.

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Response to Comment D2-105

Thank you for your comment.

Response to Comment D2-106

Thank you for your comment.

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Chapter 16: Transportation
No pertinent information regarding water resources is presented in this chapter.

Chapter 17: Public Services and Utility
No pertinent information regarding water resources is presented in this chapter.

Appendix A: Glossary

Page G-17
"Stormwater – Water that is generated by rainfall"

D2-107 This is too simplistic to be meaningful. It should be written differently to reflect that it is that component of precipitated water that is not infiltrated into the ground immediately or lost through evapotranspiration but rather runs off over the land surface and near-land-surface into stream channels.

Page G-20
"Wellhead Protection – The area of an aquifer where drinking water is pumped to users"

D2-108 This definition is incomplete. It should reflect the regulatory nature of the term, whereby the Dept. of Health requires a wellhead protection plan for Group A water systems that identifies potential contamination hazards to a wellhead. Better definitions exist within the regulations. We suggest that one of them be used.

Appendix B: Construction Methods

General Comments
D2-109 This chapter only cursorily addresses technical issues that need to be resolved with respect to groundwater migration, aquifer drainage and contamination through construction methods. No mitigation methods are mentioned regarding sealing hydrostratigraphic layers or disrupting migration. The groundwater contamination section only addresses contamination that is discovered by the construction process, it does not address preventing contamination during the construction process. Some of these issues are discussed in Chapter 3, but only in a cursory manner in the postscript tables.

B.2.1 Tunnel Construction, p. B-3, 3rd Paragraph
"Tunneling uses a precast segmented liner that is placed behind the advancing TBM [tunnel boring machine]."

D2-110 A discussion of grouting techniques would be useful here. What measures would be taken to ensure an adequate seal is used? What techniques are proposed for such a large construction event and how will placement be guaranteed effective?

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Response to Comment D2-107

The definition of stormwater has been clarified in the Glossary of the Final EIS.

Response to Comment D2-108

The definition of "wellhead protection" has been refined in the Glossary of the Final EIS.

Response to Comment D2-109

Appendix 6-B, Geology and Groundwater, of the Final EIS has been expanded since the Draft EIS, and includes discussions of construction methods, groundwater impact analyses, and mitigation approaches. For the plant site locations, a summary of this chapter is contained in response to Comment D2-4 in this letter. For a summary of the contamination potential and mitigation approaches from the treatment plant facilities to the environment, please refer to the response to the Washington State Department of Ecology, Comment W5-43.

Response to Comment D2-110

The precast segmental liner will include steel reinforcement, flexible gaskets, bolts, and pins designed to effectively support external water pressures and provide a dry tunnel. Each joint is sealed. All joints have gaskets and each joint is structurally connected during placement within and behind the tunnel boring machine (TBM). Cement grout will be placed between the segmental liner and the earth surface outside of it. The purpose of the grout is three-fold: (1) it provides a uniform confinement around the lining, (2) it forms a redundant seal outside of all the joints, and (3) it provides a linear seal that fills any voids outside the lining that eliminates any longitudinal flow along the tunnel exterior. Grout will be injected in this fashion in the area directly behind the TBM. Please refer to Appendices 3-G, Construction Approach and Schedule, and 6-B, Geology and Groundwater, of the Final EIS for additional detail.

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D2-111 **B.2.1.2 Portal Construction, p. B-4, 2nd Paragraph**
This section or any other that I have found does not mention methods of preventing groundwater leakage between stratigraphic layers. A 100 to 400 foot deep portal can rapidly drain groundwater from shallow to deeper aquifers by traveling in the voids between the structural walls of the portal and the strata. Grouting or sealing at hydrogeologic boundaries is essential to prevent discharge of shallow aquifers to deeper systems while constructing the portals.

D2-112 **B.2.1.3 Tunnel Lining, p. B-5, 2nd Full Paragraph**
"This liner would consist of a segmental, gasketed, and reinforced concrete liner system. This liner would be brought into the tunnel in segments to be assembled immediately after the TBM has been advanced..."

Specifications and options regarding the segmented liner that will be used in the tunneling process need to be evaluated for durability and effectiveness in protecting aquifers from waste water contamination. Is the liner capable of containing a waste spill in the event the conveyance fails?

D2-113 **B.2.3 Open Cut Construction, p. B-7**
There is no mention of groundwater migration and leakage mitigation measures for open cut construction methods. Trenching through glacial till can expose the underlying aquifer to contaminants. Runoff can infiltrate into the disturbed media of the trench and flow down the trench until it infiltrates an exposed section of the underlying aquifer. This is particularly a problem if a sewer pipe is leaking or other contaminants are flowing into the trench.

D2-114 **B.2.4 Jack and Bore, page B-10, 1st Paragraph**
"When pipe installation is completed, the pits would be backfilled and returned to their original condition..."

As mentioned previously, the disturbed strata in pits, trenches and portals can create pathways for groundwater and contaminants to pass from one hydrostratigraphic layer to another. Mitigation of this potential source of aquifer drainage and contamination must be addressed.

D2-115 **B.4.1 Dewatering, p. B-14, 3rd Paragraph**
"The amount of dewatering would depend on local geotechnical conditions and the height of the groundwater table above the bottom of the open cut trench, tunnel portal or pit."

The amount of dewatering and the construction alternative used also depend on the affects pumping large volumes of water from an aquifer will have on the local water district wells. If water levels drop below pump intakes, drain the available resources or redirect groundwater flow that consumers depend on, other measures will have to be considered.

Where will pumped water be diverted during the dewatering process? Will it be reinjected into deeper aquifers or flow as runoff down local streambeds?

D2-116 It is not possible for a reviewer of this DEIS to assess the potential impact of dewatering without defining the proposed dewatering plan. Even if the conditions cannot be known precisely, an effort to bracket the probable values and analyze for the worst likely situation would allow for some real discussion of this very significant component of the project. Without some definition, any discussion of impacts or their significance is futile.

Robinson & Noble, Inc Page 24

Response to Comment D2-111

An additional hydrogeotechnical investigation was completed after the publication of the Draft EIS to evaluate potential risks and appropriate construction methods for sealing the tunnels and portal structures to prevent flow along the structures. For the portals, construction methods have been chosen that will not require exterior dewatering; only dewatering of the shaft interior. Diaphragm slurry walls are one of the likely construction methods for portals which results in a tight seal between the soil strata and the concrete slurry wall. Other construction methods and the results of the study are detailed in Appendices 6-B, Geology and Groundwater, and Appendix 6-F, Groundwater and Stormwater Management at the Candidate Portal Sites, of the Final EIS.

Response to Comment D2-112

Please refer to responses to Comment D2-67 of this letter and to Cross Valley Water District, Comment D3-130. Additional detail is provided in Appendix 6-B, Geology and Groundwater, of the Final EIS.

Response to Comment D2-113

The potential for aquifer contamination at portal locations is recognized as an important issue and is described in detail in Appendix 6-B, Geology and Groundwater, of the Final EIS. In most cases, groundwater seepage will be into the portals under inward hydraulic gradients, rather than the reverse, preventing contaminants from moving out into the aquifer. In addition, spill protection and control plans will be prepared for portal construction detailing the types of chemicals that will be used, and the methods for managing these chemicals to prevent a release and to respond to a release, should one occur.

Response to Comment D2-114

Jack and bore construction is typically limited to a depth of less than 30 feet and would not be used where the groundwater table is at or above the bottom of the pits. The geotechnical field investigations indicated that the areas where jack and bore construction may be used not would cross an aquitard and expose an underlying aquifer.

Response to Comment D2-115

A discussion of groundwater management is included in Appendices 6-B, Geology and Groundwater, and 6-F, Groundwater and Stormwater Management at the Candidate Portal Sites, of the Final EIS.

Response to Comment D2-116

The approaches of handling and discharging dewatering flows have been refined since the Draft EIS, and include re-infiltration through sedimentation ponds or constructed wetlands, direct discharge to receiving water bodies, or sending flows to sewer systems if necessary. Chapter 6 of the Final EIS provides a summary of the dewatering flow management approaches anticipated for the various Brightwater System components. Additional detail is provided in Appendix 6-B, Geology and Groundwater.

1/16/03

B.4.2 Contaminated Soils and Groundwater, p. B-15, 2nd Paragraph

"If allowable, based on flow capacity and quality limits, the dewatering flows would be diverted in to a sewer for treatment at the wastewater treatment plant. If the local wastewater system cannot accept the flow, onsite treatment of the flow would be provided before discharging."

D2-117 What specific treatment plants are being considered for handling the dewatering discharges? There is no discussion of communications with specific treatment plants and what the capacity to accept such flows is for each possible receiving agent. The volume of water generated by dewatering in the permeable aquifers of the Seattle area make it unlikely that a treatment plant will be capable of handling such increases in flow for the long-term demands of this project. As such this contingency should not be offered without some preliminary commitment by the intended receiving treatment plants.

Technical Appendices

D2-118 **Earth and Groundwater**

This technical appendix does not provide much specific information for the area. Descriptions of materials are generic and appear to have been taken from regional maps or textbooks. Discussions of geotechnical characteristics are also too generic to be meaningful in the context of a DEIS. Groundwater discussion is simplistic and often just describes basic theory. It does not provide specific descriptions of the groundwater systems being impacted nor does it focus much on the vertical distribution of sediments. Since it is precisely these relationships that will dictate much of the impact potential of the conveyance routes, this is a serious short-coming.

The technical support appendix for Earth and Groundwater was expected to provide a substantial description of the geologic and hydrogeologic setting. However, it provides only a generic discussion of the glacial history and the modes of deposition responsible for the sediments of the Puget Sound Region in general. The profiles provided in figures 3, 4, and 5 in addition to being awkward without the capability to cut and splice the 5 sheets of each, provide no interpretation of the subsurface geology or the hydrogeologic implications of that geology. Without such subsurface interpretation, it is impossible for the proponent to have evaluated the probability of water quantity or water quality impacts along the conveyance routes. This section should describe as thoroughly as possible what types of materials are expected to be encountered along each route and at what depth they are expected to occur. It should also describe roughly what the water levels or potentiometric heads of the various aquifer and aquitard units are. Within the air quality analysis, modeling of potential loading and transport of contaminants was accomplished. There is no indication in this appendix or in Chapter 4 that even back-of-the-envelope analyses were performed to determine whether groundwater would be drained or contaminated with influent or effluent. We submit that the bulk of the description of the hydrogeologic systems should be provided within this appendix and referenced where necessary throughout the document. Somewhere a comprehensive description of the groundwater, surface water and geologic systems potentially affected by the project should be presented. It seems most appropriate in this appendix.

There are, in fact, significant inconsistencies within the various chapters with regard to the nature of the hydrogeologic systems and the dewatering that is expected to be required. A single, well-interpreted description of the hydrogeologic units, their presence or absence and their functions in routing the groundwater through the region between the Route 9 site and the sea would do a great

Robinson & Noble, Inc Page 25

Response to Comment D2-117

Please refer to the response to Comment D2-116 in this letter. Dewatering flow will be treated onsite to meet surface water quality discharge standards if technically feasible and cost effective. Groundwater inflow estimates have been revised based on additional data and analysis and are much lower than previously estimated.

Response to Comment D2-118

Please refer to the responses to the Washington State Department of Ecology, Comments W5-9, W5-15 and W5-40. Additional detail is provided in Appendix 6-B, Geology and Groundwater, of the Final EIS.

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D2-118 deal to add consistency and clarity to the DEIS. It is not even clear from the information presented in the appendix whether the regional and route specific hydrogeology has been determined. Without that determination any discussion of potential impacts is premature.

Air
Nothing in this appendix is pertinent to the water resource interests of the District.

D2-119 **Surface Water**
This appendix provides a substantial amount of information and does a good job of supplying support documentation as to the physical and water quality aspects of the potentially affected surface water bodies.

D2-120 **Plants, Animals and Wetlands**
This appendix is essentially a catalogue of species and settings without any reference to impacts or hydrology connections. As such it contains nothing that carries implications to the evaluation of water-resource issues.

Environmental Health
This technical appendix does not deal with issues that relate to water resources either directly or indirectly. No comments were generated from review of this section.

Noise and Vibration
No water-resource related issues were identified in review of this appendix and no comments were developed.

Aesthetics
No water-resource related issues were identified in review of this appendix and no comments were developed.

Light and Glare
No water-resource related issues were identified in review of this appendix and no comments were developed.

Recreation
No water-resource related issues were identified in review of this appendix and no comments were developed.

SUMMARY & CONCLUSIONS

D2-121 Though the DEIS document presents an appreciable amount of information describing settings and discussing the implications of those settings to the project itself, it falls short of the needed detail and analysis of potential environmental impacts and in its assessment of the project in the context of the environment within which it must be placed and ultimately function. In all too many instances, it appears as if statements concerning impacts are merely opinions inserted into an existing document. Impact analyses are not explained or even acknowledged as having been done in many cases. To protect their interests, how these impact analyses were accomplished and why specific impacts are discussed and others are not are critical to entities such as OVWSD. To accept the thoroughness of the assessment, the District needs to know more about the methods used to

Robinson & Noble, Inc Page 26

Response to Comment D2-119

Thank you for your comment.

Response to Comment D2-120

Please refer to Appendix 7-A, Affected Environment: Plants and Animals, of the Final EIS, which contains more information on Plants, Animals, and Wetlands. This information includes sensitive area reports for each treatment plant site, and additional information regarding plants, animals, and wetlands along conveyance routes.

Response to Comment D2-121

Both the Draft EIS and the Final EIS include a discussion of the probable significant adverse environmental impacts and reasonable mitigation measures associated with the proposal. The Draft EIS was issued at a time when a certain level of information was known relating to the probable significant adverse impacts of the proposal and possible methods to reasonably mitigate those impacts. Consistent with SEPA guidelines, in areas where there was uncertainty regarding the impacts, the Draft EIS presented a worst-case analysis of impacts. The Draft EIS also indicated that ongoing analysis was under way and that additional information would be forthcoming in the Final EIS. The purpose of a Final EIS is to respond to comments on the Draft EIS and, where appropriate, to provide additional or revised information and analysis relating to probable significant adverse environmental impacts of the proposal and reasonable mitigation measures. Since issuance of the Draft EIS in late 2002, considerable additional analysis has been conducted, as is the case on any large project, to further define and develop the proposal and to respond to Draft EIS comments. A number of the details that you have requested in various comments relate to either information that does not involve probable significant adverse environmental impacts or information that is important prior to issuance of actual permits, is not reasonably included in an EIS. Additional

analysis that has been conducted regarding impacts to water resources is available in Chapter 6. The conclusion was reached that there would be no impacts upon water resources that could not be mitigated to nonsignificant levels.

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identify impacts and how their magnitude and significance (or insignificance) were established. Since most impacts are merely identified as existing and not discussed in relation to the investigation that identified them, their relative importance to the District and to the proponent cannot be determined.

The reliance on BMPs and "following the regulations" to dismiss the identified impacts is unacceptable for a project of such magnitude and potential impact. Further, the concluding assertion at the end of Chapter 4 that there are no significant unavoidable environmental impacts is not substantiated by the document, dismissing significant potential impacts without explanation or justification. Dewatering, construction activities, portal insertions, and sewage transported through sensitive water resource areas constitute unavoidable, significant impacts until convincing explanation of safeguards is explicitly presented. The acknowledgement of over-flow releases to the environment is a significant adverse impact identified within the chapter itself. If the District accepts this project and its associated risks, it must be given the opportunity to do so with all necessary information. We believe the document's failure to generate a full disclosure of impacts, its propensity to understate or disregard very real impact potential, and its offering of vague mitigation all make it unsatisfactory for the SEPA process. If the proponent truly cannot define the impacts any better than is presented in the DEIS, then perhaps additional SEPA actions should be accomplished as individual components are started and once more technical information has been developed.

D2-121 We are concerned that major impact possibilities have been either ignored or glossed over possibly for the sake of process expediency. This leaves us unable to fully advise the District of the true project risks or evaluate the proponent's ability to satisfactorily mitigate against those impacts or compensate OVWSD should a catastrophic event occur threatening its water source.

D2-122 Figures 1 through 6 were generated by Robinson & Noble to provide maps and approximated cross sections through the District's service area. These are provided to facilitate discussion of the District's concerns. The information generated in developing the Deer Creek Spring WHPP was merged with descriptions of conveyance alternatives presented in the DEIS. The intent of the graphic presentation is to show the actual or possible relationship between the proposed portals and tunnels and the groundwater resources important to the District.

GENERAL RECOMMENDATIONS

D2-123
- The lack of thoroughness in the environmental impact discussions requires the District to reject the DEIS as a mechanism for addressing project SEPA requirements . The District must make it clear to the proponent that the DEIS provides insufficient information with respect to the project's potential to significantly impact regional water resources. This is particularly true in dealings with Deer Creek Spring issues. The impact potential to the quantity and/or quality of the spring discharge exists to varying degrees regardless of the conveyance option ultimately used. Yet, that potential is either ignored or downplayed so much it is barely recognizable in the document. Better definition of the nature of potential impacts and proposed mitigation is essential before the District can determine whether the project is legitimately claiming that impacts will not occur.

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Response to Comment D2-122

The groundwater evaluations summarized in Appendix 6-B, Geology and Groundwater, of the Final EIS considers the information provided. Please refer to Chapter 6 of the Final EIS for additional information.

Response to Comment D2-123

Please refer to the response to Comment D2-118 in this letter.

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D2-124 • The District should vigorously oppose the concept of a shallow force main carrying immense volumes of untreated sewage through the springs' zone of contribution. The concept of a conveyance breach as a result of a seismic event or some other unforeseen catastrophe would have such devastating consequences that it should not be discussed further by the proponent.

D2-125 • The portals for all tunnel conveyances introduce significant vulnerabilities during construction and, perhaps, in their operational state. Even if the sealing is accomplished as intended, the bottom of the portal represents an exposure of the aquifer during construction. Specific information as to what chemical agents and fuels might be in close proximity to this exposed aquifer is lacking in the document. The District should insist that a list of all potentially contaminating agents be provided for review detailing the handling, storage, and use protocols for each agent.

D2-126 • Sealing the 50-foot diameter, vertical portal accesses is complicated at best. Some pressure placement mechanism of the sealing materials must be employed. It is important that the District know the nature of this mechanism and the proposed sealing material. As hydrogeologists, Robinson & Noble has been intimately involved in the development of sealing techniques in placing vertical wells over the past 55 years. Our knowledge of this problem tells us it is much easier to describe than to accomplish. Failure to achieve a complete seal may allow significant quantities of groundwater to leak vertically and discharge either through deeper aquifers or the annular space between the tunnel and the undisturbed materials surrounding it. Once such leakage begins, it is very difficult to go back and determine precisely which portion of which portal or tunnel is responsible for the resulting groundwater transfer.

D2-127 • The District must require substantial monitoring to identify aquifer pre-construction conditions , and the underlying unit and equally substantial water level monitoring of those units during and for some time after the construction of a given conveyance infrastructure. This monitoring should be described in terms of the proposed monitoring well placement and spacing relative to the planned structures and nature and frequency of water level recording, collection, and analysis. Monitoring of the water quality near these structures should also be required with an equally clear statement of the level of effort that will be used. If the District does not receive satisfactory information detailing and verifying aquifer protection methods, it should challenge any construction with the potential to impact either quantity or quality of Deer Creek Spring aquifer flows.

State of Washington
Hydrogeologist
643
Licensed Geologist
F. MICHAEL KRAUTKRAMER

F. Michael Krautkramer

Robinson & Noble, Inc Page 28

Response to Comment D2-124

King County has spoken with the water districts in the Brightwater project area-Olympic View, Lake Forest Park, and Cross Valley-regarding their concerns about impacts to aquifers. King County completed additional studies in response to those concerns. Please refer to Chapter 6 and Appendix 6-B, Geology and Groundwater, of the Final EIS. King County believes that the Brightwater System can be constructed in a manner that protects water quality and public health.

Response to Comment D2-125

A detailed list of chemicals to be used during construction of the portals will be included as part of the spill protection and control plan that will be developed prior to construction.

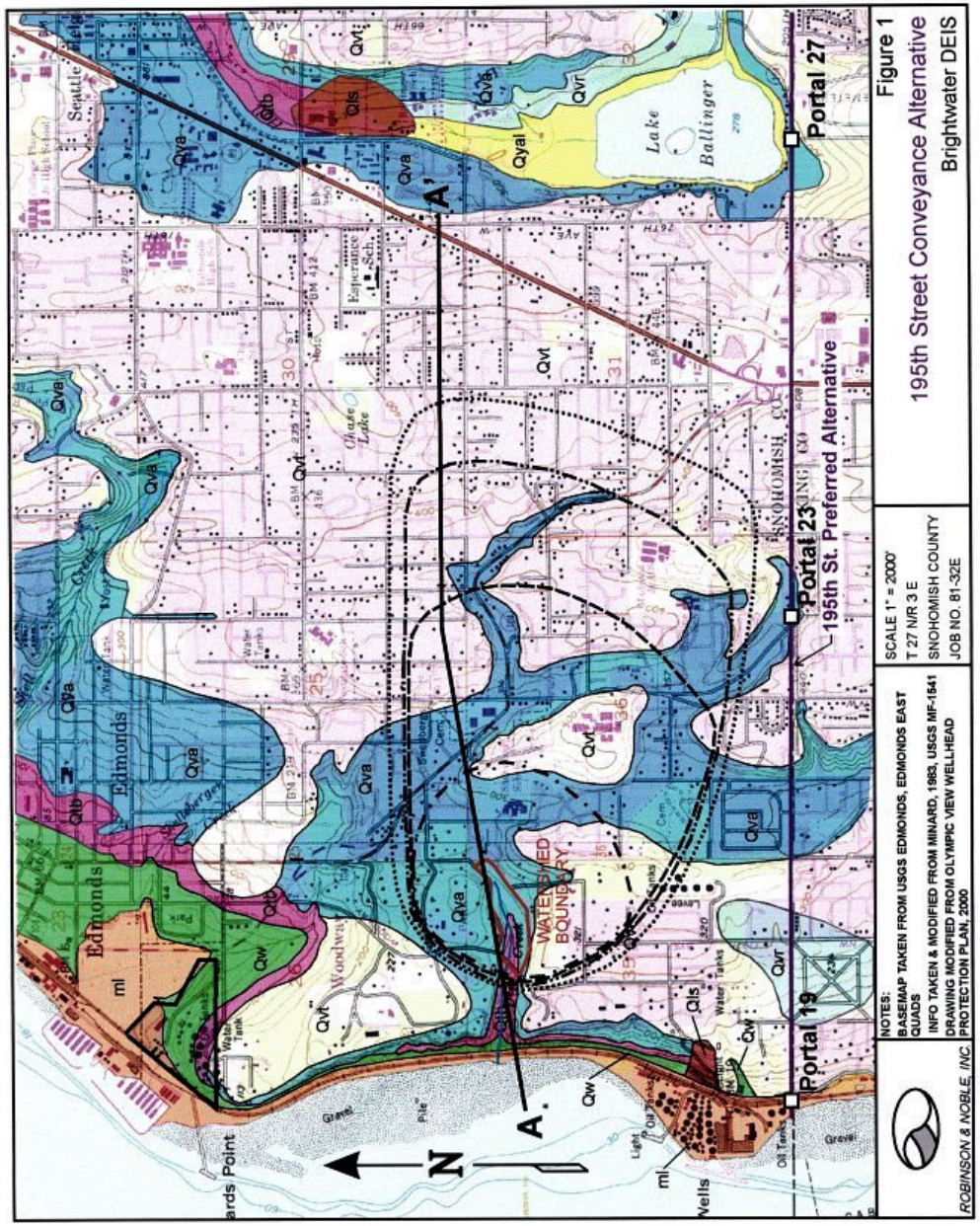
Response to Comment D2-126

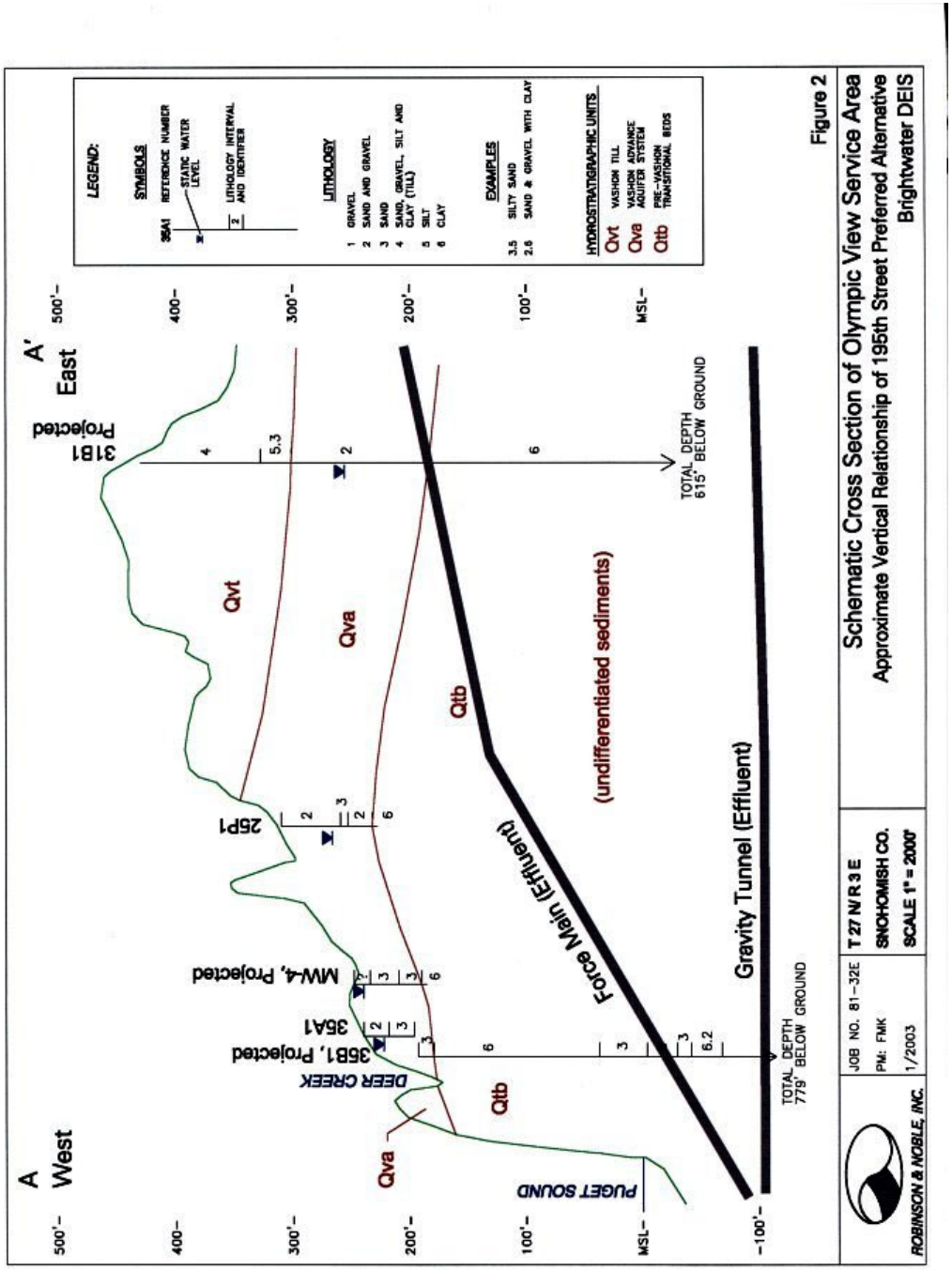
Thank you for your comment.

Response to Comment D2-127

King County will work with all agencies along the conveyance corridor to develop construction and monitoring plans that will ensure the protection of the various aquifers.

FIGURES


Portal 19
Portal 23
Portal 27
195th St. Preferred Alternative
WATERSHED BOUNDARY
A
A'
N
Lake Ballinger
Edmonds
Qva
Qvt
Qyal
Qls
Qw
Qb
ml
NOTES:
BASEMAP TAKEN FROM USGS EDMONDS, EDMONDS EAST QUADS
INFO TAKEN & MODIFIED FROM MINARD, 1983, USGS MF-1541
DRAWING MODIFIED FROM OLYMPIC VIEW WELLHEAD PROTECTION PLAN, 2000
ROBINSON & NOBLE, INC.
SCALE 1" = 2000'
T 27 N/R 3 E
SNOHOMISH COUNTY
JOB NO. 81-32E
Figure 1
195th Street Conveyance Alternative
Brightwater DEIS


LEGEND:
SYMBOLS
35A1 REFERENCE NUMBER
STATIC WATER LEVEL
LITHOLOGY INTERVAL AND IDENTIFIER
LITHOLOGY
1 GRAVEL
2 SAND AND GRAVEL
3 SAND
4 SAND, GRAVEL, SILT AND CLAY (TILL)
5 SILT
6 CLAY
EXAMPLES
3.5 SILTY SAND
2.6 SAND & GRAVEL WITH CLAY
HYDROSTRATIGRAPHIC UNITS
Qvt VASHON TILL
Qva VASHON ADVANCE AQUIFER SYSTEM
Qtb PRE-VASHON TRANSITIONAL BEDS
A West
A' East
500'
400
300'
200'
100'
MSL
-100'
31B1 Projected
25P1
MW-4, Projected
35A1
35B1, Projected
DEER CREEK
PUGET SOUND
Qvt
Qva
Qtb
Qva
Qtb
(undifferentiated sediments)
Force Main (Effluent)
Gravity Tunnel (Effluent)
TOTAL DEPTH 615' BELOW GROUND
TOTAL DEPTH 779' BELOW GROUND
ROBINSON & NOBLE, INC.
JOB NO. 81-32E
PM: FMK
1/2003
T 27 N/R 3 E
SNOHOMISH CO.
SCALE 1" = 2000'
Schematic Cross Section of Olympic View Service Area
Approximate Vertical Relationship of 195th Street Preferred Alternative
Brightwater DEIS
Figure 2

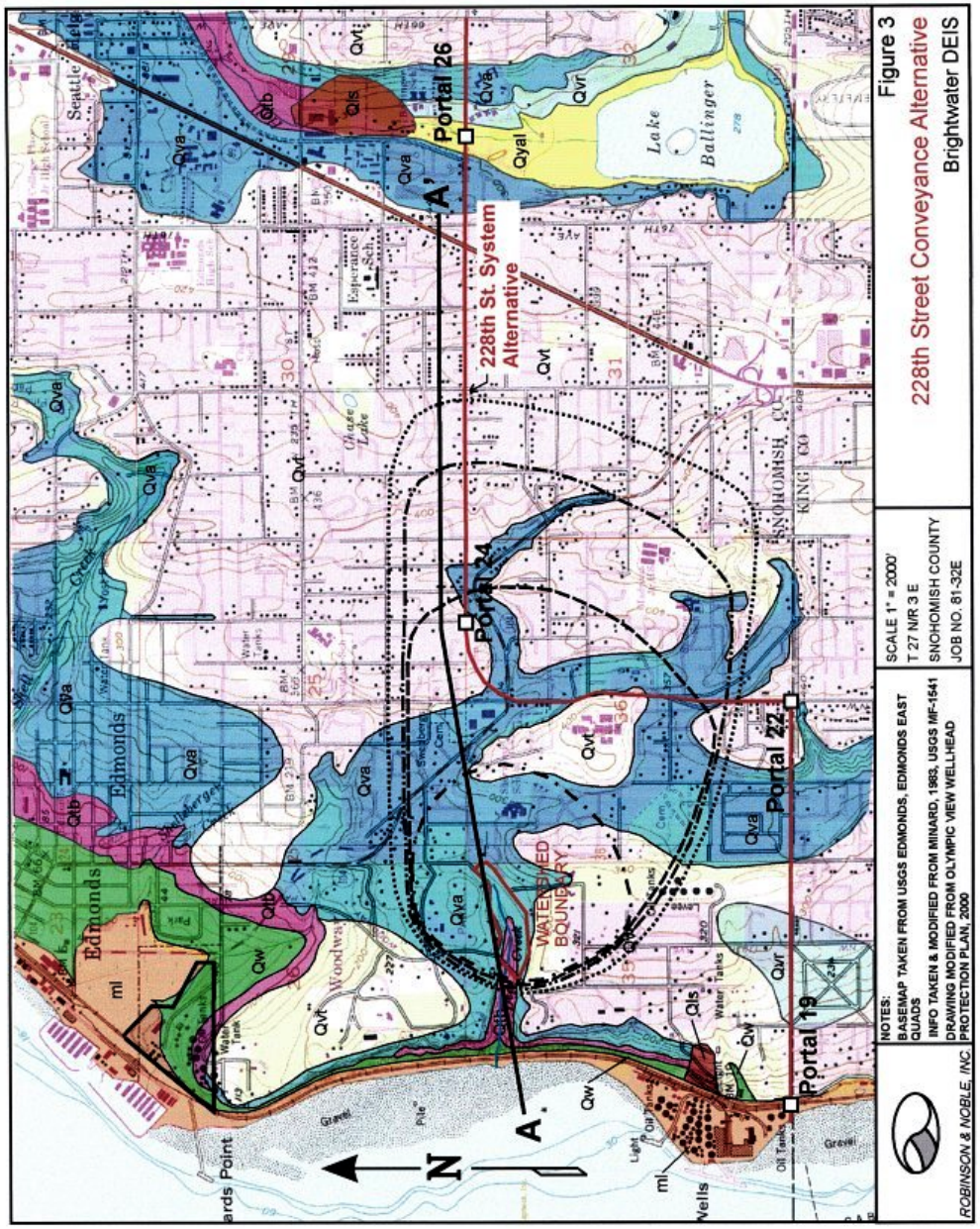
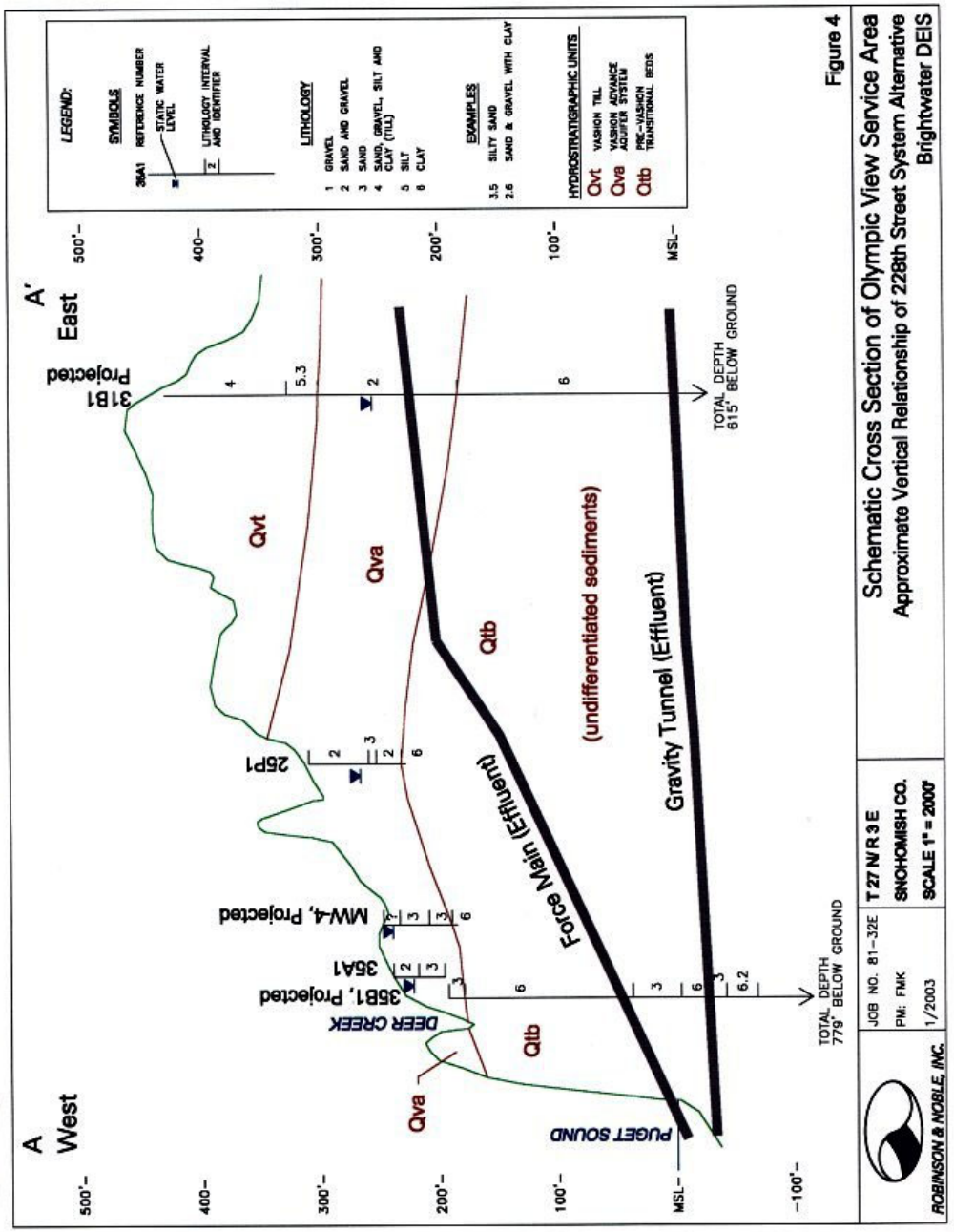


Figure 3
228th Street Conveyance Alternative
Brightwater DEIS


A
West
A'
East
500'
400
300'
200'
100'
MSL
-100'
31B1
Projected
25P1
MW-4, Projected
35A1
35B1, Projected
DEER CREEK
PUGET SOUND
Qva
Qvt
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Force Main (Effluent)
(undifferentiated sediments)
Gravity Tunnel (Effluent)
TOTAL DEPTH 615' BELOW GROUND
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JOB NO. 81-32E
PM: FMK
1/2003
T 27 N/ R 3 E
SNOHOMISH CO.
SCALE 1" = 2000'
Schematic Cross Section of Olympic View Service Area
Approximate Vertical Relationship of 228th Street System Alternative
Brightwater DEIS
Figure 4

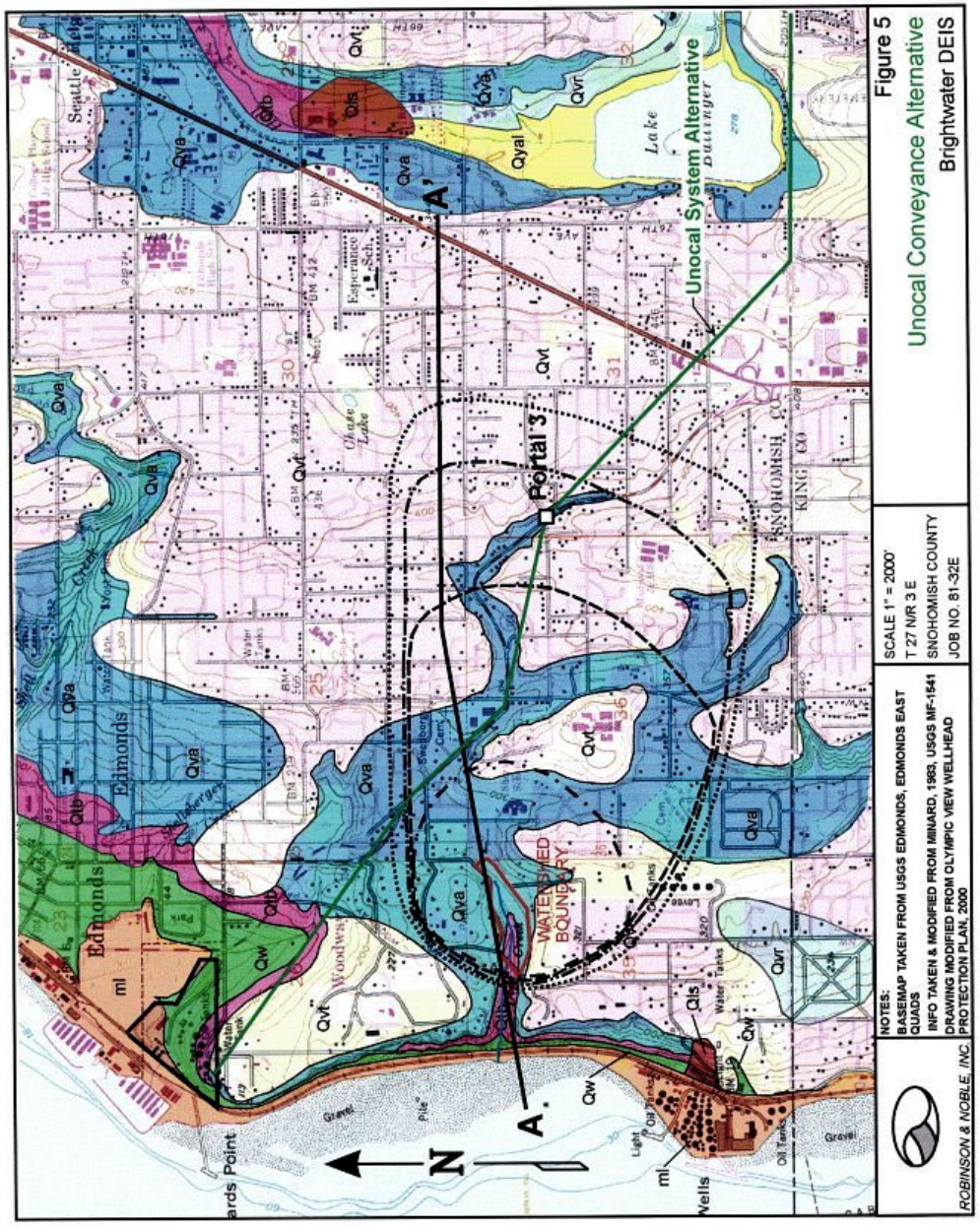
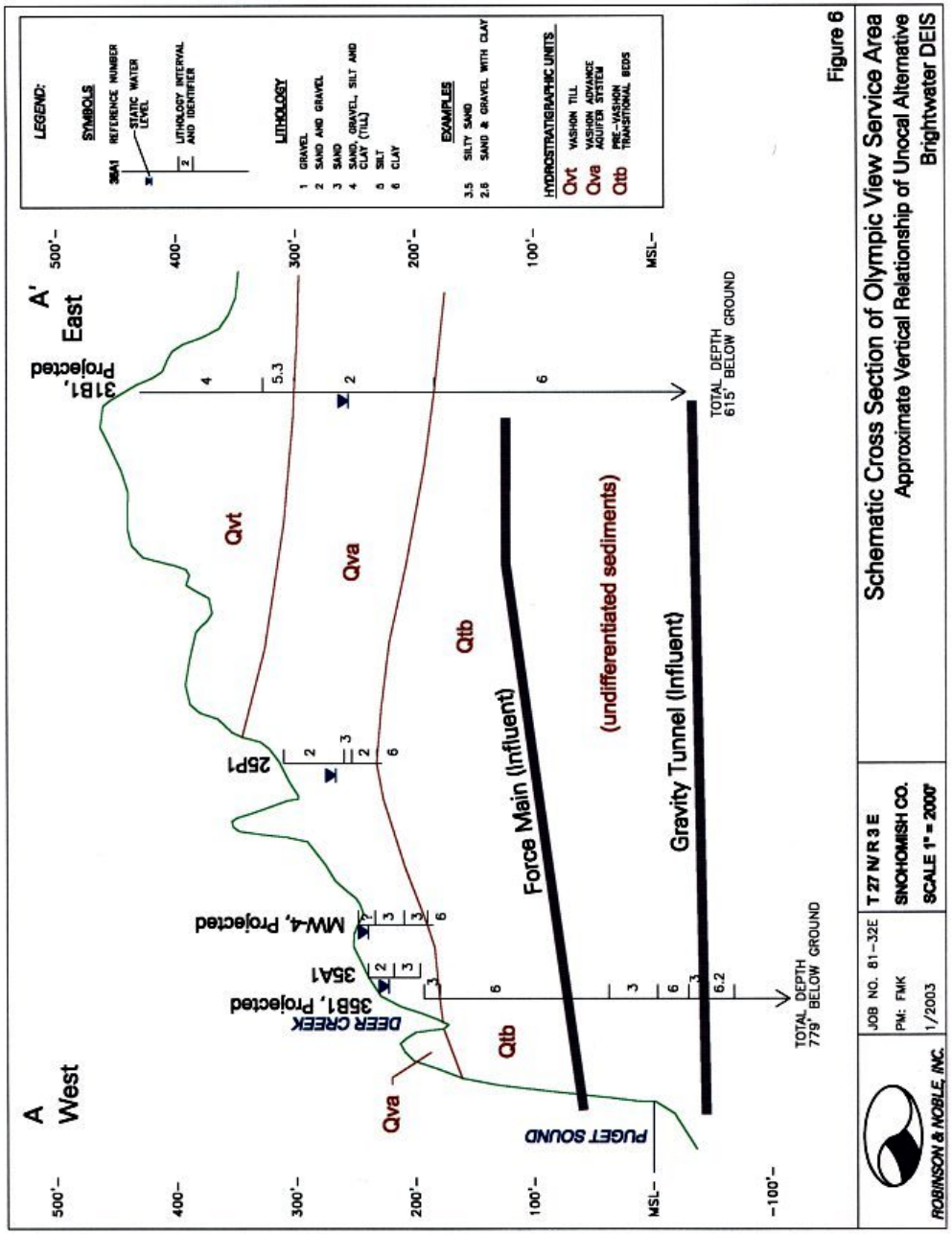


Figure 5
Unocal Conveyance Alternative
Brightwater DEIS


LEGEND:
SYMBOLS
35A1 REFERENCE NUMBER
STATIC WATER LEVEL
LITHOLOGY INTERVAL AND IDENTIFIER
LITHOLOGY
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25P1
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35B1, Projected
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JOB NO. 81-32E
PM: FMK
1/2003
T 27 N/R 3 E
SNOHOMISH CO.
SCALE 1" = 2000'
Schematic Cross Section of Olympic View Service Area
Approximate Vertical Relationship of Unocal Alternative
Brightwater DEIS
Figure 6

OTHER GOVERNMENTAL ENTITIES

FINAL ENVIRONMENTAL IMPACT STATEMENT

Brightwater Regional Wastewater Treatment System

COMMENTS AND RESPONSES

G3
PORT OF EDMONDS

FINAL
ENVIRONMENTAL
IMPACT STATEMENT

Brightwater
Regional Wastewater
Treatment System

COMMENTS AND RESPONSES

PORT OF EDMONDS
336 Admiral Way · Edmonds, WA 98020-7214 · (425) 774-0549 · (425) 774-7837 FAX

January 17, 2003

Mr. Don Theiler
Manager and SEPA Responsible Official
Environmental Planning
King County Wastewater Treatment Division
King Street Center: KFC-NR-0505
201 South Jackson Street
Seattle, WA 98104-9972

RECEIVED
JAN 21 2003
ENVIRONMENTAL PLANNING DIVISION

Dear Mr. Theiler:

The Port of Edmonds is responding to the Draft Environmental Impact Statement (DEIS) regarding the Brightwater Regional Wastewater Treatment System, with input from its consultant, Blumen Consulting Group, Inc., and sub consultants MFG, Inc. and the Watershed Company. This letter will highlight the concerns that the Port of Edmonds has in regards to the siting of the Brightwater Regional Wastewater Treatment System at the UNOCAL site. The Port of Edmonds is a neighbor of the UNOCAL site and sits immediately adjacent to the property on the west side. The Port also has an interest in the impacts related to the Edmonds Marsh, which is under the jurisdiction of the City of Edmonds. The Port owns the property adjacent to the marsh on the north side (Harbor Square Business Complex and the Harbor Square Athletic Club.) The Port of Edmonds requests that the following comments be addressed in the Final Environmental Impact Statement (FEIS). The Port also anticipates that comments in the enclosed report that was prepared by the Blumen Consulting Group, not addressed in this letter, will be addressed in the FEIS. G3-1

The Port submitted a Scoping Letter, dated June 25, 2002, to King County and also a follow up letter to the King County Executive dated July 25, 2002, expressing a variety of concerns that would need to be addressed in the DEIS. The following are issues to which the Port feels King County must pay particular attention. These issues were not adequately addressed in the DEIS and will need to be addressed in much more detail in the FEIS. G3-2

Collocation of the Brightwater Plant with the Edmonds Crossing Multi Modal Project G3-3

- Details need to be provided on how the collocation will be accomplished relative to the treatment plant design. Without this detail, the reviewing agencies can not determine whether or not the two facilities can collocate on the same site.
- Cumulative impacts from collocation of the two facilities must be comprehensively addressed. King County must have a detailed plan that ensures that these two substantial infrastructures could be collocated.

Response to Comment G3-1

King County is responding individually to each comment in the cover letter from the Port of Edmonds, as well as to each comment in the report from Blumen Consulting Group, Inc. Revisions will be made in the Final EIS as appropriate.

Response to Comment G3-2

Both the Draft EIS and the Final EIS include a reasonably thorough discussion of the probable significant adverse environmental impacts and reasonable mitigation measures for those identified impacts. Additional detailed analysis concerning these Port issues is set forth in Chapter 3 of the Final EIS. Also, please refer to the response to Comments G3-3 through G3-24 in this letter.

Response to Comment G3-3

Additional description and graphics of both of the Unocal site sub-alternatives are included in Chapter 3 and Appendix 3-A, Project Description: Treatment Plant, of the Final EIS. These two sub-alternatives are not mutually exclusive and could co-exist as depicted in the Project Description outlined in Chapter 3. Cumulative impacts of the Brightwater Treatment Plant with the multimodal facility are described in Chapters 4 through 17 of the Final EIS.

Page Two
January 17, 2003
Port of Edmonds

Earth and Groundwater

G3-4
- Identify whether a hydrologic connection exists between the UNOCAL site and Willow Creek and identify the "special mitigation measures" that would be required for significant impacts to Willow Creek and the Edmonds Marsh.

Air Quality/Odor

G3-5
- Sensitive receptors must include specifically, the elderly adults and senior housing centers that lie within the study area. The South County Senior Center, the Landing Retirement Center, the Olympic View Apartments are examples of such facilities.

G3-6
- Address the issue of why smaller generators were not proposed, which would provide better air quality and less noise impacts versus the electric generators specified.

G3-7
- Identify the ambient concentrations of criteria pollutants and compare those to the air quality standards for criteria pollutants.

G3-8
- Complete an evaluation of the potential air quality impacts to the Port and surrounding areas from the use of piston engines as an alternative for electrical generation.

G3-9
- Address the effectiveness of a carbon bed solution maintained in a high humidity environment of a scrubber exhaust. Explain how effective this control system is for odors caused by contaminants other than H_2S and ammonia.

Surface Water/Water Quality

G3-10
- Impacts to Willow Creek and the Edmonds Marsh from construction must be avoided. Describe specific measures that will address impacts.

G3-11
- Any spills from the treatment plant to Willow Creek and the Edmonds Marsh are unacceptable. How will potential spills be contained?

Plants, Animals, and Wetlands

G3-12
- What mitigation measures will be implemented to prevent flow reductions in Willow Creek and/or salinity changes in the Edmonds Marsh?
- Loss of habitat and the loss of wildlife in the marsh is unacceptable. What mitigation measures will be instituted to prevent this from occurring?
- What mitigation measure will be instituted to ensure that water levels in the stream and wetland areas will not be reduced which would affect fish, amphibians, aquatic insects and other aquatic organisms?
- The risk of impact to adjacent sensitive environments is too high relative to a no risk or low risk alternative under the Route 9 Plan.

Response to Comment G3-4

The potential impacts to Willow Creek and the Edmonds Marsh as the result of construction dewatering have been evaluated and are summarized in Appendix 6-B, Geology and Groundwater, of the Final EIS. Also, please refer to the response to the Washington State Department of Ecology, Comment W5-15, for a summary of these analyses and mitigation approaches. The assumed combination of onsite dewatering wells, a vertical hydraulic barrier wall, and surface augmentation of flow to the marsh or creeks is expected to result in no significant adverse environmental impacts to water resources adjacent to the Unocal site.

Response to Comment G3-5

For information on sensitive receptors please refer to the Final EIS Appendix 5-A, Odor and Air Quality.

Response to Comment G3-6

In the Final EIS, the one standby engine is sized to provide emergency power to serve essential life and safety needs and to start up the cogens during a power failure. These standby generators would only be used as an emergency source of power. This analysis assumes that the engine could be operated for up to 500 hours per year, or 6 percent of the year, in a standby mode.

Response to Comment G3-7

Emissions of criteria pollutants from the proposed Brightwater Treatment Plant are well below the Prevention of Significant Deterioration regulatory level of 250 tons per year that requires a source to evaluate the impact of their emissions on the National and State Ambient Air Quality Standard. Therefore, no estimated ambient concentrations for criteria pollutants are available.

Response to Comment G3-8

Internal combustion engines were evaluated for energy generation. Formaldehyde emission levels from the IC engines exceeded the acceptable source impact level for this plant. If, in the future, control technology applied to the IC engines can demonstrate lower formaldehyde emission, then IC engines will be re-evaluated as an alternative.

Response to Comment G3-9

The main function of the carbon scrubbers is to remove any trace odors coming from the upstream three-stage chemical scrubbers. Odor compounds and their properties in relationship to carbon removal would be factored into the Brightwater design to provide long, adequate life to the carbon before replacement is needed. As noted in the comment, carbon is not as effective in removing some volatile air emission contaminants (that are covered under volatile organic compound [VOC] or hazardous air pollutant [HAP] regulations or laws) from the wastewater if the carbon is wet. Thus, for removal of these air contaminants, any carbon removal potential in this air quality regulatory and permitting analyses was not included. However, the carbon system would be designed to prevent condensation in the carbon to the extent possible. The fan would be located upstream of the carbon to slightly increase the air temperature (and decrease the relative humidity). A mist eliminator would be included between the chemical scrubbers and the carbon system. The carbon system may be constructed in a recessed concrete structure with an open top. The concrete would help insulate the carbon to prevent condensation from cool ambient air temperatures.

No reduction in removal capacity for hydrogen sulfide, ammonia, reduced sulfur compounds, amines, fatty acids, and other odorous compounds is expected. The carbon system does not take credit for removing any air contaminants, because removal would require a lower relative humidity than is proposed, as noted in the comment. The air toxic emission estimates assume no removal from the odor prevention system. All the air toxics are within the acceptable source impact levels (ASILs) except for chloroform. Please refer to Appendix 5-A, Odor and Air Quality: Treatment Plant, of the Final EIS for more information.

Response to Comment G3-10

Chapter 6 of the Final EIS discloses potential impacts to Willow Creek and Edmonds Marsh during construction. These impacts could include a lowering of base flows during dewatering; accidental spills of oils, fuels, greases, and other materials during construction; and spills during operation. Impacts would be minimized through several measures, including taking into consideration the guidelines in the Washington State Department of Ecology's *Stormwater Management Manual for western Washington* (August 2001). Additional information on these impacts is also provided in Appendix 6-B, Geology and Groundwater, and in Chapter 6 of the Final EIS.

Response to Comment G3-11

King County recognizes the sensitivity of Willow Creek and Edmonds Marsh, and is committed to minimizing the risk of spills. Potential impacts to Willow Creek would be minimized during plant operation using a number of measures. Please refer to Chapter 9 of the Final EIS for more discussion of measures that would be used at both treatment plants to minimize wastewater or chemical spills.

Response to Comment G3-12

New reports and revisions in Chapters 6 and 7 of the Final EIS disclose impacts and measures to minimize flow reductions in Willow Creek and Edmonds Marsh. Mitigation measures will include the use of cutoff walls to minimize dewatering during construction as described in Chapter 6 of the Final EIS. Please refer to the response to the Washington State Department of Natural Resources, Comment W3-187. Please refer to Chapter 7 of the Final EIS for more information about mitigation measures for direct wetland impacts and other sensitive resources.

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Noise

G3-13
- What mitigation measures will be implemented to prevent unacceptable increases over the existing sound levels to nearby Sensitive receptors?
- Clarify measures to reduce noise associated with various generating plant components, including the electrical generators which would be placed near the southern boundary of the UNOCAL site.

Land and Shoreline Use

G3-14
- Describe the implications of the proposed project to the UNOCAL System Alternative and what the process would be for the location of an "essential public facility".

G3-15
- Relate the land use analysis to the Port of Edmond's Strategic Plan and Master Plan as adopted by the Port and the City of Edmonds in 2001.
- Describe environmental impacts from this project on the Port's future development and what mitigation measures will be implemented.
- Describe how the wastewater treatment plant will impact economic development on Port property now and in the future.

Transportation and Public Services

G3-16
- Explain in detail how emergency vehicle access will be maintained to the marina at all times.

G3-17
G3-18
- Provide a detailed description of the material transport operation, including the number of barges involved in removing the excavated material, how Admiral Way and Port property will be impacted by truck trips involved in transport and how these transportation impacts will be mitigated.

G3-19
The Port of Edmonds believes that the potential siting of the wastewater treatment plant on the UNOCAL site would have significant adverse impacts to Port property, to the Edmonds Crossing project, to the marine environment, and to the entire community surrounding this facility. The FEIS must deal comprehensively with these impacts and respond to the mitigation steps that would be taken to reduce the impact of the treatment plant. Your attention to these concerns is appreciated.

Sincerely Yours,

Christopher W. Keuss CMM
Executive Director

cc: Port Commission

Response to Comment G3-13

Chapter 10 of the Final EIS has been revised to include a more detailed discussion of noise impacts and mitigation measures at the Unocal site. Appendix 10-A, Noise and Vibration: Treatment Plant, of the Final EIS includes greater detail on noise mitigating measures. Noise mitigation for generating plant components would include engine room absorptive surface treatments, acoustic louvers, ventilation duct silencers, and residential grade or better exhaust silencers. The electrical generating plant would be located near the retaining wall to achieve the greatest barrier attenuation by creating a large line-of-sight interruption between the source and receiver. Please refer to the response to Snohomish County Planning and Development Services, Comment S3-132.

Response to Comment G3-14

Please refer to Chapter 11 of the Final EIS for a discussion of impacts and mitigation associated with the siting of Brightwater at the Unocal site. Specific measures for siting Brightwater would include:

- Coordination with property owners regarding property acquisition and relocation assistance
- Coordination with the City of Edmonds to procure all necessary land and shoreline permits to site and construct the Brightwater Treatment Plant and associated conveyance and outfall facilities
- Coordination with the City of Edmonds regarding site development standards, design, and appropriate mitigation.

Acquisition of the Unocal site would follow the property acquisition process used by King County Wastewater Treatment Division (WTD). In addition to acquiring property, the county often must purchase easements or the right to use property owned by another person for a particular purpose. Typically, the property King County WTD can acquire falls

into three categories: temporary construction easements, permanent utility easements, and ownership.

Any relocation of uses would be in accordance with the federal Uniform Relocation and Real Property Acquisition Policies Act, as it applies to displaced businesses, residential owners, and tenants. WTD's real property acquisition procedures are designed to provide consistent and equitable treatment of all affected property owners and tenants (King County Department of Natural Resources and Parks, March 2003a and March 2003b). Please refer to the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 and the King County Property Acquisition and Relocation Web site at http://dnr.metrokc.gov/wtd/row/acquisition.htm for more information.

Response to Comment G3-15

Chapter 11 and Appendix 11-A, Land Use Plans and Policies: Brightwater Regional Wastewater Treatment System, of the Final EIS has been revised to include a discussion of the Port of Edmond's Strategic Plan and Master Plan. This discussion appears under Affected Environment: Unocal System. A discussion of impacts to the Port's future development plans is included under Impacts and Mitigation: Unocal System.

In response to your comment regarding how the wastewater treatment plant will impact economic development on Port property now and in the future, SEPA does not require the evaluation of speculative and remote impacts resulting from a proposed action. "SEPA contemplates that the general welfare, social, economic and other requirements and essential considerations of state policy will be taken into account in weighting and balancing alternatives and in making final decisions. The EIS is not required to evaluate and document all of the possible effects and considerations of a decision or to contain the balancing judgments that must ultimately be made by the decision makers (WAC 197-11-448(1))."

Response to Comment G3-16

Emergency vehicle access to the marina would be maintained at all times during all construction phases of the Brightwater project. No access modifications or detour routes would be required for emergency vehicles. Please refer to Chapter 16 of the Final EIS.

Response to Comment G3-17

Construction of an outfall at the proposed Unocal treatment plant site would require excavation for an onshore outfall segment from the proposed effluent pump station location to the shoreline and excavation for a nearshore outfall segment to approximately –80 feet MLLW. Open trench construction, as discussed in Chapter 3 of the Final EIS, and evaluated in Appendix 3-F, Nearshore Alignment and Construction Methods Alternatives, is the preferred construction method for each of these segments.

The preferred onshore trench segment length would be approximately 1,000 feet. The excavated volume is anticipated to be approximately 6,600 cubic yards (cy) based on a trench section and an assumed depth of 15 feet as described in Appendix 3-C, Project Description: Outfall, of the Final EIS. The depth of the trench would be selected to avoid local utilities and provide adequate cover as the pipeline crosses under the BNSF railroad. Excavated soils removed from the trench would be transported by dump trucks to a regulated landfill site selected on the presence, if any, and concentration of contaminants in the soils. Based on a typical truck volume of 16 cy, approximately 500 truck trips would be required for removal of excavated soils. The anticipated duration of onshore trench construction is 1 to 2 months; thus, 6 to 12 truck trips per day would be required for removal of onshore excavated soils. Excavated soils could be stored at the plant site and transported during non-peak traffic hours as described in Chapter 16 of the Final EIS. Truck traffic routes are described for the plant site is also in Chapter 16.

Backfill materials and pipeline segments for the onshore trench would be transported by trucks supporting the onshore trench installation. Pipe segments and backfill materials are likely to be delivered to the plant site staging area over a period of 2 to 3 months prior and/or during construction. Approximately 5,500 cy of granular backfill and 450 cy bedding material would be required as described in Appendix 3-C. Based on a typical truck volume 470 truck trips would be required for delivery of backfill materials. An additional 100 truck trips would be required for pipeline and material delivery. Typically three to five trucks

trips per day would be required for delivery of materials. As with disposal of excavated materials, truck traffic would be routed as described for the plant site and could be scheduled during non-peak traffic hours.

The preferred nearshore trench segment to –80 feet MLLW would be approximately 950 feet long. The excavated material volume could be up to 24,400 cy based on the unsheeted trench sections and an assumed trench depth of 12 feet as shown in Chapter 3. Trench sheeting would decrease the volume of excavated material. Excavated soils removed from the trench would be transported by barge to a regulated aquatic disposal site regulated by the U.S. Army Corps of Engineers (COE). The exact location of the disposal site will be determined through the construction permitting process. Based on a typical barge volume of 1,500 cy, 16 barge trips would be required for removal of excavated soils. The anticipated duration of nearshore trench construction is 2 to 3 months, thus, four to seven barge trips per month would be required for removal of in-water excavated soils. Barge trips would be coordinated with Washington State Ferries (WSF) so that scheduled routes are not disrupted.

Backfill materials and pipeline segments for the nearshore trench would also be transported by barges. Approximately 18,800 cy of granular backfill, 4,500 cy of armoring material, and 350 cy of bedding material would be required, assuming unsheeted trench construction. Based on a typical barge volume of 1,500 cy, 16 barge trips would be required for delivery of backfill materials. An additional one or two barge trips would be required for pipeline segment delivery. Five to eight barge trips per month would be required for delivery of materials. Barge trips would be coordinated with WSF so that scheduled routes are not disrupted.

The number of barge trips for excavation and delivery of materials would be reduced if trench sheeting were used or if native materials excavated from the site were used as backfill material. Other impact mitigation measures are discussed in the Impact and Mitigation Summary in Chapter 3 specifically, as well as in each of the individual chapters of the Final EIS.

Response to Comment G3-18

All construction trips would access the proposed Unocal site through the intersection of Pine Street and Edmonds Way. Access to Admiral Way from Dayton Street would not be altered in any way.

Response to Comment G3-19

Impacts to Port of Edmonds property, the Edmonds Crossing project, the marine environment, and the community surrounding the Unocal site are discussed throughout the document in each chapter of the Final EIS that corresponds to an element of the environment. Mitigation measures, both proposed and potential, are identified at the end of each chapter.

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January 15, 2003

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RE: Comments on the Brightwater Regional Wastewater Treatment System, Draft Environmental Impact Statement

Blumen Consulting Group, Inc., MFG, Inc, and The Watershed Company have reviewed the *Brightwater Regional Wastewater Treatment System, Draft Environmental Impact Statement* (Draft EIS) on behalf of the Port of Edmonds and offer the following comments. Our comments are directed at the Unocal System Alternative, which has significant potential to impact Port operations and properties, including the waterfront and marina, resident businesses, Harbor Square, and adjacent recreation and natural resources. In addition to operating the only large-scale covered moorage on Puget Sound, the Port is a partner in development of the Edmonds saltwater marsh interpretive trail and the Edmonds fishing pier. The Port supports the Deer Creek salmon hatchery, and community and environmental programs based along the Edmonds waterfront. The Port is also an active participant with the City of Edmonds in the planning process for the Edmonds Crossing multi-modal project. G3-20

After review of the Draft EIS and based on the analysis included therein, it is clear that implementation of the Unocal System Alternative would result in a significantly greater number and scope of adverse environmental impacts compared to the Route 9 alternatives. These comparatively greater impacts to the environment arise from a number of factors unique to the UNOCAL site, not least of which are its topographical constraints, close proximity to unusually sensitive, diverse, and valuable habitats, and its location in an urban setting directly adjacent to the Edmonds waterfront and various developed land uses, including the Port's marine and upland facilities. The following identifies our key concerns and questions regarding the Draft EIS. G3-21

Response to Comment G3-20

Thank you for your comment.

Response to Comment G3-21

Both the Unocal site and the Route 9 site can accommodate all the required facilities to satisfy the policy siting criteria adopted by the King County Council on May 15, 2001, in Ordinance 14107.

After consideration of policy criteria and preliminary engineering data, Executive Sims identified Route 9 as the Preferred Alternative in the Draft EIS, recognizing that the larger size and more regular shape of the site offers many benefits. However, both sites are feasible alternatives for locating the Brightwater treatment facilities.

The environmental analysis in the Final EIS recognizes that the Unocal site is considerably smaller and in a highly visible location, surrounded by a greater amount of residential, commercial, and recreational uses than is found at the Route 9 site. Sensitive areas are also described and the impacts are analyzed. The Final EIS includes mitigation to address significant adverse environmental impacts that could result from constructing and operating the treatment plant at the Unocal site. This analysis is included in Chapter 3 in the Comparison of Alternatives section, but can also be found in each chapter of the Final EIS that corresponds to an element of the environment (Chapters 4 through 17).

Although the Executive selected a Preferred Alternative to analyze during the EIS process, it is not a final decision. All three of the action alternatives studied in the EIS meet our region's needs. If the Unocal site is selected, King County would work with each local jurisdiction to address potential impacts and determine appropriate mitigation during the permitting process.

UNOCAL SYSTEM ALTERNATIVE

General Comments

Unocal System Sub-Alternatives

G3-22 The Unocal System Alternative includes two sub-alternatives: 1) a structural "lid" over the northern portion of the site to accommodate a multimodal transportation facility (i.e. Edmonds Crossing project) and/or a public park; and 2) expansion of the Brightwater treatment plant to 72 mgd to treat flows from the Edmonds and Lynnwood treatment plants, should flow transfer be pursued in the future. Neither of these sub-alternatives is shown in a representative figure or described in any detail. The EIS does not discuss whether or not the sub-alternatives are mutually exclusive and/or show how the two sub-alternatives would coexist. In that these sub-alternatives are considered as options for the Unocal System Alternative and are included in the impact analyses, the EIS must provide conceptual graphics and a detailed description of both of these sub-alternatives, showing the possible extent of the "lid", the changes to the footprint of the treatment plant associated with expansion to 72 mgd, and how the two sub-alternatives would coexist.

Collocation of the Brightwater Plant with the Edmonds Crossing Multi-Modal Project

G3-23 The Draft EIS indicates that preliminary engineering for the Brightwater treatment plant has been done with the new multi-modal Edmonds ferry terminal in mind, including provisions for a structural "lid." However, no supporting detail on how collocation would be accomplished relative to aspects of treatment plant design is included in the Draft EIS. This lack of detail makes it impossible for the reader to assess whether impacts from the "lid" have been addressed adequately in the Draft EIS and calls into question the greater issue of whether or not collocation of the two facilities is actually feasible.

G3-24 The Edmonds Crossing project is supported through local and regional planning efforts by the Port of Edmonds, City of Edmonds, Snohomish County, Puget Sound Regional Council, and WSDOT and must be considered as a real possibility in the impact analysis. The UNOCAL site is identified as the preferred alternative (preliminary) in the Edmonds Crossing Draft EIS (WSDOT 1998) and a significant amount of analysis for this project has been done. Preparation of the Final EIS is currently in progress. The Brightwater EIS must include sufficient detail on collocation of the two facilities to demonstrate its feasibility, and potential impacts from possible collocation must be addressed comprehensively within the cumulative impact discussions for each element of the environment.

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Response to Comment G3-22

Please refer to the response to Comment G3-3 in this letter.

Response to Comment G3-23

Additional description and graphical representatives of both the Unocal site sub-alternatives has been conducted for the Final EIS and can be found in the Chapter 3 and Appendix 3-A, Project Description: Treatment Plant, of the Final EIS.

Under the "Unocal Structural Lid" sub-alternative, the Brightwater Treatment Plant facilities would occupy the majority of the useable area of the site and the Edmonds Crossing project would be constructed on top of a lid above the treatment facilities. The complete functionality of the Edmonds Crossing facility, based on the Edmonds Crossing conceptual design titled "Revised Point Edwards Alternative," would be incorporated into the conceptual lid design. The following components would be included:

- Ferry holding lanes (7 total)
- Ferry traffic exit lanes (2 total)
- Bus terminal
- Rail terminal (below lid)
- Short-term, long-term, and employee vehicle parking (580 spaces total)
- Pedestrian access (elevator and escalator/stairs) to transport passengers from the ferry or bus terminal on the lid to the rail terminal below
- People mover to transport pedestrians from the lid to the ferry
- Stormwater from the lid treated in the treatment plant's stormwater ponds
- Four toll booths with an office above
- Bus stops and bus turn-around on Admiral Way.

Response to Comment G3-24

The Draft EIS did evaluate the potential environmental impacts associated with the co-location of the Brightwater

project at the Unocal site and the Edmonds Crossing project in Chapters 3, 4, 5, 8, 10, 11, 12, 13, and 16. In addition, cumulative impact analyses throughout the document incorporate reasonably foreseeable future major projects that could, in conjunction with Brightwater, result in cumulative construction and operation impacts.

Cumulative Impact Discussions

G3-24 Cumulative impacts to Port facilities from overlapping construction periods that would likely occur with the Brightwater treatment plant, the Edmonds Crossing multi-modal project and/or Sound Transit improvements along the BNSF rail line could be significant over a multiple year period. In particular, the effect of collocation of a treatment plant with the Edmonds Crossing project on the timing and magnitude of construction activity must be addressed. Cumulative impacts related to air quality emissions, noise and truck traffic would affect existing marina operations, levels of visitor use, and could affect the timing of Port of Edmonds projects identified in its Master Plan. Potential cumulative construction and operation impacts must be evaluated fully and comprehensively in the EIS based on environmental review conducted to date on these projects, and effective and specific mitigation measures need to be identified.

Specific Comments

Earth and Groundwater

G3-25 The presence of a surface/groundwater connection between the Edmonds Marsh/Willow Creek and the treatment plant site (and if present, its extent) must be determined in order to fully identify the potential for significant impacts and necessary mitigation to prevent flow reductions in Willow Creek and/or salinity changes in the marsh. The Draft EIS states that no data have been collected to indicate a hydrologic connection (p. 7-61) and also states that "if" such a connection exists, "special mitigation measures would be undertaken….as described in Chapter 6." These are not described in Chapter 6 and must be identified in the EIS.

Air Quality/Odor

Comments on the Air Quality/Odor analysis reflect technical review of the Draft EIS by MFG, Inc. (MFG). Several aspects of the air quality evaluation that must be clarified in the Final EIS are described and discussed below.

G3-26 Identification of Sensitive Receptors

Figure 5-2 reportedly identifies sensitive receptors in the area. While the text mentions "several schools and a community college" within one and five miles of the site (page 5-9), the graphic shows more than 50 schools within the five mile radius. This apparent error should be corrected. Also, the text mentions "elderly adults" as typical sensitive receptors. It must be clarified whether such facilities exist within the study area (e.g. the South County Senior Center, the Landing Retirement Center, and a nearby low income senior housing facility).

Response to Comment G3-25

Chapter 6 and Appendix 6-B, Geology and Groundwater, of the Final EIS acknowledge a surface/groundwater connection between the Edmonds Marsh/Willow Creek and the treatment plant. Groundwater impact analyses are summarized in these references for the construction dewatering and operations phases of the Brightwater Treatment Plant. As summarized, the lower yard area of the Unocal site is underlain by pervious granular deposits and is adjacent to the marsh and streams. Construction dewatering using wells solely would generate large flows that would be challenging to manage during construction. Therefore, more stringent construction dewatering methods than those initially proposed in the Draft EIS are now assumed for the Final EIS in an effort to reduce the groundwater dewatering-related impacts on the marsh and streams. These more stringent construction methods include dewatering using wells in combination with vertical barriers (tight sheet pile cutoff walls) and possibly surface water recharge systems back to the marsh/streams if necessary. These methods are expected to result in manageable dewatering flows, and would have negligible impacts on the adjacent water bodies. The estimated dewatering rate for the 3-year plant construction period is 300 gpm, with a peak month-long rate of 720 gpm.

Response to Comment G3-26

For information on sensitive receptors please refer to the response to the City of Woodinville, Comment C5-125.

G3-26 There are numerous residences located close to the UNOCAL site that are not discussed or mentioned which could be considered sensitive receptors. Facilities on Port property used by the public such as restaurants with outdoor decks, outdoor athletic facilities, public fishing spots, and pedestrian walkways should also be considered sensitive. The air quality analysis in the EIS needs to include these other sensitive receptors.

Failure to Evaluate Criteria Pollutants

G3-27 The Draft EIS goes into extensive detail regarding the modeling of toxic air pollutants. However, the analysis fails to address the air quality impacts of "criteria pollutants," for which ambient air quality standards have been set by federal and state regulations. Emissions of criteria pollutants are computed and presented in Table 5-7, but no evaluation is given beyond the calculation of emissions. The EIS must identify what the ambient concentrations would be and compare those to the ambient air quality standards.

Generators

G3-28 The proposed project includes on-site electrical generation. The impression from the Draft EIS is that the electrical generators are included in the project plan as a means of making use of the energy in the digester gas that would otherwise be lost. MFG's calculations of the energy balance show that the proposed electrical generation capacity far exceeds the energy contained in the available digester gas.

The Draft EIS quotes an average production of digester gas of 350 cubic feet per minute and an assumed energy content of this low quality gas of 550 Btu per cubic foot. The net energy contained in this gas is 11.55 million Btu/hr. Even if 40% of the energy in the gas is recovered as electricity (an optimistic estimate), the energy in the gas would represent only 1.35 megawatts of electricity. The proposed plan is to generate 8 to 10 megawatts from gas turbines at the site. It is therefore clear that most of the energy from these generators would have to come from natural gas, not digester gas. It is suggested in the Draft EIS that the generators would likely be sized to meet expected plant electrical demand. This raises the question of why smaller generators were not proposed to destroy the digester gas, with the balance of electrical demand to be provided by purchased electricity.

Under the proposed plan (with possibly oversized on-site generators), neighboring uses, including residences in Woodway to the south as well as commercial establishments on Port property, would be subjected to greater than necessary potential air quality and noise impacts from a larger power plant than is potentially necessary to destroy the digester gas and recover the energy. The need for the size of the generators proposed must be clearly substantiated in the Final EIS.

Response to Comment G3-27

Because the emissions of criteria pollutants from the Brightwater System would be well below the air quality regulatory limits to be considered for ambient air impact analysis, no modeling for criteria pollutants was necessary.

Response to Comment G3-28

Natural gas would be used to generate power to power the plant under average wet-weather conditions in addition to the digester gas. The natural gas system would only be used if the dual electric feed from the grid were lost and power generation using natural gas was required. The air quality and noise impacts of the proposed generators are described in both, Chapters 5 and 10 of the Final EIS. The proposed cogeneration turbines were sized based upon standard turbine sizes and do not present any significant air quality impacts; the noise impacts would be mitigated so as not to affect residential and commercial establishments adjacent to the plant sites. If smaller turbine sites are available that meet the needs of the project then the air quality and noise impacts would potentially be less than stated in the Final EIS.

Use of Piston Engines as an Alternative for Electrical Generation

G3-29 The proposed project calls for the use of gas turbines to generate electricity, but also identifies the possibility of large-bore piston engines as an alternative, if emissions were equivalent or lower. MFG's experience is that emissions from piston engines could not attain the levels of emission reported in Table 5-7. For example, a facility in eastern Washington burning landfill gas (a fuel similar although not identical to digester gas), generates 10.5 megawatts of electricity, very similar in size to the proposed electrical generation facility at the Brightwater treatment plant. The Washington Department of Ecology required the eastern Washington facility to both obtain a Title V permit as a major source, and to apply for a Prevention of Significant Deterioration (PSD) permit because emissions exceed the major source threshold under PSD. Our comment is that emissions from the proposed power generation facility at the Brightwater treatment plant could have much higher emissions than has been suggested in the EIS, particularly with the use of piston engines. The EIS must include a complete evaluation of the potential air quality impacts to the Port and other surrounding land uses associated with emissions of criteria pollutants from these proposed generators, if they are to be considered as an option.

Odor Controls

G3-30 The proposed odor controls for the plant recognize the limitations of wet scrubbers for controlling many organics, and include carbon beds for additional treatment of the air. MFG concurs that carbon is an excellent method for removing organics, with some caution, however. Carbon beds are particularly sensitive to moisture. If the carbon gets wet, the ability for chemicals to adhere to the surface of the carbon is reduced, and the control efficiency of the system is dramatically decreased. When using carbon as a polishing stream downstream of a wet scrubber, there are obvious concerns for moisture either being carried over from the scrubber or condensing in the carbon bed as a result of passing high humidity (near 100%) air from the scrubber exhaust directly to the carbon bed.

The Draft EIS discusses 99.99% control for H_2S, and equates that to odor control. In fact, this amount of control may be very optimistic for control of odors as a whole. If the H_2S is truly removed to that level, the residual odors in the gas stream will undoubtedly be dominated by species other than H_2S. At that point, the carbon bed will become the critical factor in determining the control effectiveness of the system. It is important for the Draft EIS to address how the effectiveness of the carbon bed can be maintained in the high humidity environment of a scrubber exhaust. The EIS must include a discussion of the effectiveness of the control system for odors caused by contaminants other than H_2S and ammonia.

Response to Comment G3-29

Add-on control would be needed to achieve the required emission levels from internal combustion engines. If, in the future, add-on controls could make IC engines an acceptable alternative, the emissions and ambient impacts would be addressed and documented in a document available for public review, like the Notice of Construction Permit Application.

Response to Comment G3-30

Please refer to the response to Comment G3-9 in this letter.

Surface Water/Water Quality

G3-31 The Draft EIS states that based on the proximity of the treatment plant site to Willow Creek and on construction that would occur within the Willow Creek buffer, it is possible that Willow Creek could receive increased sediment loads resulting in reduced water depth and decreased habitat value for up to a three year period, despite proposed mitigation measures. In addition, any uncontained spills could migrate to the stream.

Willow Creek flows through and provides a primary water source for the Edmonds Marsh wetland complex. The marsh includes a valuable assemblage of wetland habitats including forested and scrub-shrub wetland, emergent wetland, open water wetland, and saltwater marsh and provides habitat for a number of special status species. Based on the unique, sensitive, and valuable habitat that the marsh provides, avoiding impacts to the Edmonds Marsh is critical. Construction of the Unocal System Alternative represents a significant risk to Willow Creek and the marsh.

G3-32 The Draft EIS also states that while emergency overflows into Puget Sound in Outfall Zone 6 would occur only after all other flow management options had been exhausted and/or in the event of a catastrophic plant failure (i.e. in other words rarely), emergency overflows would result in increased concentrations of bacteria, nutrients, and toxicants into Puget Sound. State Water Quality Standards for Class AA waters would be exceeded for hours or possibly days as a result of such an overflow. Some pollutants, such as heavy metals or those that do not break down in water, could be retained in sediments and could bioaccumulate in shellfish and other aquatic organisms. Construction of an emergency relief outfall is only proposed under the Unocal System Alternative and presents additional and unnecessary water quality risks to recreational shellfishing opportunities along the Edmonds waterfront.

Plants, Animals, and Wetlands

Comments on the Plants, Animals, and Wetlands section reflect technical review of the Draft EIS by The Watershed Company.

G3-33 The analysis in the Draft EIS supports the above-mentioned conclusion that due to the close proximity of the UNOCAL site to the unusually sensitive, diverse, and valuable habitats represented by the Edmonds Marsh and Puget Sound, the risk of impact to adjacent sensitive environments is high. This risk would not be an issue under the Route 9 alternatives.

G3-34 It is not clear in the Draft EIS how comprehensive the total mitigation package would be and whether it would be adequate. As stated above under *Groundwater*, whether or not a groundwater connection exists between the Edmonds Marsh/Willow Creek and the treatment plant site must be determined in the EIS in order to provide full disclosure and allow assessment of mitigation measures by the general public.

Response to Comment G3-31

King County acknowledges the resource value of Willow Creek and Edmonds Marsh, and is committed to implementing stringent measures to avoid impacts. Please refer to the response to the City of Woodinville, Comment C5-70, regarding sedimentation control and monitoring.

Response to Comment G3-32

Your comment reflects potential impacts of an emergency discharge to Puget Sound. King County is proposing to minimize the impacts of such a discharge by routing the emergency flow through the existing outfall. The discharge would be well removed from the shoreline and maximum dilution would occur. Assuming the discharge occurs under typical oceanographic conditions, the effluent would remain below the shellfish beds and away from the shoreline.

Response to Comment G3-33

Thank you for your comment.

Response to Comment G3-34

Please refer to response to the Washington State Department of Ecology, Comment W5-15 and Appendix 6-B, Geology and Groundwater, of the Final EIS for a detailed discussion of this issue.

G3-35 The EIS states that dewatering discharges would be routed directly to Puget Sound after treatment, not to Willow Creek (Table 3-11). The option to discharge dewatering water to the creeks and/or wetlands should not be precluded if the discharge water quality is adequate and these areas are in need of supplementation. Without mitigation, lower water levels in the streams and wetlands would negatively affect fish, amphibians, aquatic insects, and other aquatic organisms.

Noise

Comments on the Noise analysis reflect technical review of the Draft EIS by MFG, Inc. (MFG).

The Draft EIS, including supporting documentation, provides insufficient information to support the conclusions regarding environmental noise impacts and required mitigation measures. There are no details regarding the methods or the findings of the impact or mitigation analyses conducted for operational noise. It is highly likely that the proposed facility *could* be designed to comply with applicable noise limits and to prevent unacceptable increases over existing sound levels at nearby sensitive receivers. However, it is not clear in the Draft EIS that either of these issues has actually been evaluated in relation to the proposed design of the facility on the UNOCAL (or Route 9) site. The Draft EIS, therefore does not adequately provide either decision makers or the affected public with the means to determine whether the proposed facility at the UNOCAL (or Route 9) site would either comply with applicable noise limits or impact nearby residences by significantly changing the existing acoustic environment. Further analysis and documentation is necessary to substantiate the conclusions regarding noise compliance and lack of impacts presented in the Draft EIS.

G3-36 *Section 10.2.1, Study Methodology-Assumptions* of the Draft EIS provides no details of the methods, assumptions, or the findings of the impact or mitigation analyses for operational noise. For example, the list of assumptions includes two bullet items, one of which states the following:

> "Noise levels, due to operation, at the property line of the sensitive receptor, will not exceed the most stringent noise level limits of the applicable codes. This will be the result of mitigation to meet the legal limits."

While this reflects the goal the site/facility design, it is not an appropriate "assumption" regarding the method of analysis.

A subsequent statement in this same section says: "Methods and results of the analysis are described in more detail in the Noise Technical Appendix." However, no such documentation has been provided. In the absence of details regarding both methods and results, it is not possible to assess whether the proposed facility would be able to comply with applicable noise limits and/or whether it would cause noise impacts at nearby receptors.

Response to Comment G3-35

Please refer to the response to the Washington State Department of Ecology, Comment W5-15, and Appendix 6-B, Geology and Groundwater, of the Final EIS for a detailed discussion of this issue.

Chapter 6 of the Final EIS summarizes the additional option of discharging dewatering water to Edmonds Marsh and creeks, if appropriate.

Response to Comment G3-36

The impact of the Brightwater Treatment Plant on the Unocal site is stated to be a 5-dBA increase in the minimum hour existing ambient noise level. Chapter 10 of the Final EIS has been revised to provide additional discussion of evaluation methods to reach this conclusion. Mitigation of treatment plant noise includes specific treatments of specific sources as discussed in Appendix 10-A, Noise and Vibration: Treatment Plant, of the Final EIS. Please refer to the response to the Snohomish County Planning and Development Services, Comment S3-132.

The assumptions stated in the Draft EIS, Section 10.2.1 have been revised in the Final EIS to indicate the process to achieve the mitigated operational noise levels. The Draft EIS Noise Technical Appendix only included the results of field data from the existing ambient noise measurements. Appendix 10-A includes noise reduction methods and technologies for treatment plant noise sources.

G3-37 *Section 10.2.2.2 Operational Impacts - Unocal Site* – states that daytime facility sound levels are not expected to result in an increase in existing noise levels at the nearest noise-sensitive receptors, but that nighttime noise could increase levels up to 5 dBA. It further states that facility noise would comply with Edmonds noise limits. No basis is provided for either of these statements.

This same section says: "Refer to the Monitoring section additional for discussion of measures to reduce noise levels" (sic). It is not clear to which section of the larger document this statement refers.

G3-38 *Section 10.3.1.2 Operational Mitigation* - lists a number of features that *could* be employed to reduce noise from the proposed facility. Previous language says mitigation measures have been identified for implementation and that specified mitigation measures would be implemented. However, it is not clear from the information presented in the Draft EIS whether such mitigation measures were evaluated using quantitative methods to ensure that these specified mitigation measures would be sufficient to comply with noise limits and prevent noise impacts at nearby sensitive receptors.

The mitigation section identifies measures to reduce noise associated with various noise generating plant components, however it does not mention the electrical generators (a major noise source) which could be placed near the southern boundary of the UNOCAL site closest to the residences that border the site. Whether noise from such generators was ever considered is not clear and needs to be addressed in the Final EIS.

Land and Shoreline Use

G3-39 We concur with the finding in the land use analysis that construction of a wastewater treatment plant at the UNOCAL site is inconsistent with the City of Edmonds Comprehensive Plan, the Downtown Waterfront Plan, and with the MP1 and MP2 zoning regulations that currently apply to the site.

G3-40 The Final EIS must acknowledge the updated status of the proposed residential development for the Upper Yard of the UNOCAL site, which we understand is currently undergoing design review by the City of Edmonds.

G3-41 The EIS must also provide a discussion of the implications of this proposed project to the Unocal System Alternative and describe what the process would be to reserve the UNOCAL site for possible location of an "essential public facility."

G3-42 The land use analysis in the Draft EIS does not include a discussion of the *Port of Edmonds Strategic Plan and Update (2002)* and the *Port of Edmonds Master Plan* which was formally adopted by Port and City of Edmonds officials in 2001. The EIS should discuss the relationship of the Brightwater treatment plant to these Port plans, including its compatibility with the Port's guiding principles for its relationship with other sites and for site development.

Response to Comment G3-37

The 5-dBA increase over nighttime minimum ambient is proposed as a maximum for treatment plant design criteria that can be achieved with practical means. This is believed to result in community acceptance as long as pure tone (fixed pitch) components are attenuated to low enough levels to not be discernible in the overall sound spectrum and the noise level is not varying, but is constant.

The Final EIS specifies the minimum City of Edmonds Code noise level limit to be 45 dBA measured at the adjoining residential property line in the nighttime hours of 11:30 p.m. to 6 a.m. per Chapter 17.60, Performance Standards, of Title 17, General Zoning Regulations. The existing minimum ambient level at the adjacent residential properties during these hours is 34 dBA. The treatment plant operations could increase the minimum noise level to 39 dBA, which is below the Edmonds Code requirement and therefore, will be in compliance with that code. The reference to the "Monitoring section" in the Draft EIS has been replaced with a reference to section "Mitigation Measures."

Response to Comment G3-38

The Final EIS language has been expanded to include specific noise reduction methods for application to specific treatment plant sources, including electrical generators. Please also refer to the response to the Snohomish County Planning and Development Services, Comment S3-132.

Response to Comment G3-39

Thank you for your comment.

Response to Comment G3-40

Chapter 11 of the Final EIS acknowledges the proposed residential development at the Unocal site and includes a discussion of potential impacts resulting from development of the Brightwater Treatment Plant at the site, including a discussion of displaced housing capacity. This information

has been updated in the Final EIS to reflect the current status of development review of the proposal as well as new information from Snohomish County's *Snohomish County Tomorrow 2002 Growth Monitoring/Buildable Lands Report*.

Response to Comment G3-41

Please refer to response to Comment G3-14 in this letter.

Response to Comment G3-42

Please refer to response to Comment G3-15 in this letter.

Transportation and Public Services

G3-43 The sole access to the Port of Edmonds marina and associated waterfront is from Dayton Avenue along Admiral Way. Construction impacts under the Unocal System Alternative identify potential delays to police or emergency service vehicles due to detours or road closures. Maintaining emergency vehicle access to the marina at all times is a requirement.

G3-44 Construction of the Brightwater treatment plant would require removal of two million cubic yards of material. The Draft EIS identifies construction of a temporary barge dock to reduce truck traffic as a mitigation option, and the use of either trucks or a conveyor to remove excavated material and deliver other construction materials from the site to the barge dock. The EIS must include a detailed description of the material transport operation, including identifying how many barges would be involved in removing

G3-45 excavated material, whether or not Admiral Way or Port property would be impacted and how, the number of truck trips per day that could be involved in transport, and how any potential transportation impacts would be mitigated.

Sincerely,

Michael Blumen
President

Denise Evans
Senior Associate

Blumen Consulting Group, Inc.

Response to Comment G3-43

Please refer to the response to Comment G3-16 in this letter.

Response to Comment G3-44

Use of a construction barge dock is not part of the proposal for the Unocal System. If the Unocal System is selected and if King County decides to pursue using a construction barge dock, the Port of Edmonds will be consulted and the additional necessary environmental review associated with this option, including disposal of materials, will be conducted. Updated information regarding this option is available in the revised project description, in Chapter 3 of the Final EIS.

Response to Comment G3-45

Please refer to the response to Comment G3-18 in this letter. The barge dock option for the Unocal System is not part of the proposal. All concrete and materials would be transported by single-unit trucks and all earthwork by double-unit truck-and-trailers.

PORT OF EDMONDS

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January 23, 2003

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ENVIRONMENTAL
PLANNING DIVISION

Mr. Don Theiler
Manager and SEPA Responsible Official
Environmental Planning
King County Wastewater Treatment Division
King Street Center: KFC-NR-0505
201 South Jackson Street
Seattle, WA 98104-9972

Dear Mr. Theiler:

This letter is an Addendum to the Port of Edmond's response to the draft Environmental Impact Statement (DEIS) regarding the Brightwater Regional Wastewater, as submitted to your office dated January 17, 2003.

I have been asked by the Commission to clarify one portion of my letter under the section, "***Land and Shoreline Use***". The first bullet under this heading states, "Describe the implications of the proposed project to the UNOCAL System Alternative and what the process would be for the location of an "essential public facility". I would like to clarify the comment per the following correction:

G3-46

- Describe the implications of the proposed residential development for the upper yard to the UNOCAL Alternative and describe what the process would be to reserve the UNOCAL site for the possible location of an "essential public facility".

Thank you for considering the above comment in our response letter of January 17, 2003. If you have any questions, please feel free in contacting my office.

Sincerely Yours,

Christopher W. Keuss CMM
Executive Director

cc: Port Commission

Response to Comment G3-46

Please refer to response to Comment G3-14 in this letter.

G5
PUGET SOUND CLEAN AIR AGENCY

FINAL
ENVIRONMENTAL
IMPACT STATEMENT

Brightwater
Regional Wastewater
Treatment System

COMMENTS AND RESPONSES

Puget Sound Clean Air Agency

www.pscleanair.org

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JAN 22 2003
ENVIRONMENTAL PLANNING DIVISION

January 21, 2003

Environmental Planning
King Co. Wastewater Treatment Division
201 South Jackson St. Suite 505
Seattle, WA 98104-3588

Re: Brightwater Treatment System
Puget Sound Clean Air Agency Comments on
The November 2002 Draft Environmental Impact Statement

G5-1 The Puget Sound Clean Air Agency appreciates the opportunity and is pleased to comment on this project. Your document demonstrates that, while protecting water quality for the region, this project has generated much study and evaluation that will serve to protect the air quality for the residents and businesses surrounding the two alternative plant sites.

Attached is a list of specific technical suggestions and comments for various subsections of Chapter Five and the associated Technical Memorandum, arranged by numbered paragraph, or by table and page number. All of these comments should be considered minor comments.

G5-2 Our only major comment is that Best Available Control Technology, or BACT, as described in your document, may change as the technology for emission controls advances. Emission controls to the BACT level applies to criteria air pollutants, toxic air pollutants, and odorous emissions. Also, though we regard emissions estimates at the fence line as important information, by regulation our review must emphasize a review of current BACT. Permit application submissions are evaluated by the Clean Air Agency using the knowledge and experience available as of that time. Therefore, the public reading your draft document should realize that because several years may pass between the initial studies and permit application to the Clean Air Agency, there may be differences between the emission controls approved during the air permitting process for installation when compared to those described in the draft EIS.

Please contact me at (206) 689-4066 or claudew@pscleanair.org if you have any questions or concerns about these comments.

Sincerely,

Claude M. Williams, P.E.
Air Pollution Engineer II

CMW:*ns*
Enclosure

cc: Steven M. Van Slyke John Anderson Doug Brown/Ecology NWRO

Response to Comment G5-1

Thank you for your comment.

Response to Comment G5-2

Additional text was added to the Final EIS, Appendix 5-A, Odor and Air Quality: Treatment Plant, to try to make it clear that the best available control technology (BACT) analysis would be conducted at the time of the Notice of Construction Application and would likely be no less stringent as described in the Final EIS.

The Puget Sound Clean Air Agency Technical Comments

On The Brightwater Treatment System EIS

November 2002 - Draft Environmental Impact Statement
Chapter 5 - AIR

G5-3

5.1.1.1 Overview of Air Quality Standards

Comment: The proper abbreviation for The Puget Sound Clean Air Agency is "PS Clean Air", not "PSCAA".

G5-4

Table 5-1 National and State Ambient Air Quality Standards

Comment: Another column should be added with the Puget Sound Clean Air Ambient Air Quality Standards from Regulation I, Section 11.01. Those standards are similar to both the National and the State standards with a few differences. The data from the Puget Sound Clean Air Regulation I is inserted here:

SECTION 11.01 AMBIENT AIR QUALITY STANDARDS
Adopted 04/14/94 (784)

(a) Ambient air quality standards shall be as follows:

Averaging Period	Carbon Monoxide (ppm) (ppm)	PM10 ($\mu g/m^3$)	Ozone (ppm)	Sulfur Dioxide (ppm)	Lead ($\mu g/m^3$)	Nitrogen Dioxide (ppm)
annual		50[a]		0.02[b]	1.5[b]	0.053[b]
calendar qtr.				0.10[b]		
24 hours		150[c]				
8 hours	9[d]					
1 hour	35[d]			0.12[e]	0.25[f]/0.40[b]	

ppm = parts per million by volume
µg/m3 = micrograms per cubic meter (@ 25°C and 760 mm Hg)

a attained when the expected annual arithmetic mean concentration, as determined in accordance with 40 CFR Part 50, Appendix K, is less than or equal to 50 µg/m3
b never to be exceeded
c attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m3, as determined in accordance with 40 CFR Part 50, Appendix K, is equal to or less than one
d not to be exceeded more than once per year
e attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is equal to or less than one, as determined by 40 CFR Part 50, Appendix H
f not to be exceeded more than twice in 7 consecutive days

Response to Comment G5-3

This correction has been made to the final document.

Response to Comment G5-4

The Puget Sound Clean Air Ambient Air Quality Standards have been added to Appendix 5-A, Odor and Air Quality: Treatment Plant, of the Final EIS.

The Puget Sound Clean Air Agency Technical Comments
On The Brightwater Treatment System EIS

G5-5

5.2.2.1 Construction Impacts & 5.3.1.1 Construction

Comments: Since soils will be removed from the selected site it was stated that fugitive dust emissions from construction would be reduced by implementing a watering program at the construction site. Other reasonable precautions that should be used for construction sites, include, but are not limited to the following, and could be listed in 5.3.1.1:

(1) Formulation of a Dust Suppression Plan to control dust generated on-site.

(2) Implementation of a dust management policy for trucks transporting excavation and other dust generating materials to and from the site. (e.g. provide adequate freeboard and cover all loads)

(3) The use of control equipment, enclosures, and wet (or chemical) suppression techniques, as practical, and curtailment during high winds;

(4) Surfacing roadways and parking areas with asphalt, concrete, or gravel;

(5) Reducing vehicle speeds, constructing pavement or rip rap exit aprons;

(6) Cleaning vehicle undercarriages before they exit, using hoses or automated wheel-washers, to prevent the track-out of mud or dirt onto paved public roadways.

It is a requirement of Puget Sound Clean Air Agency Regulation I, Section 9.15 that no person shall cause or allow visible emissions unless reasonable precautions are employed.

G5-6

5.2.2.2 Operational Impacts

Comments: This section lists the goal for odor control at the Brightwater Treatment Plant as "the prevention of offsite nuisance odors". This will be accomplished by a combination of design and practices/procedures. The design will remove 99.99 percent hydrogen sulfide from the process exhaust, using "the highest degree of odor control equipment and strategies currently available for municipal wastewater plants in the United States", and will insure that any remaining emissions of H2S, ammonia, amines, and mercaptan-based compounds will be undetectable to most noses beyond the fence line. Since this high standard appears in the EIS it will be used by the Puget Sound Clean Air Agency to evaluate future Notice of Construction Application documents for the plant.

G5-7

Table 5-4 through 5-6

Comment: For comparison, show in at least one table that the Odor Threshold for H2S is 0.0081 ppm (as per Odor detection and Threshold limit values (federal) for Various Chemicals, from Journal of Applied Toxicology, Volume 3, No. 6 (1983) by John E. Amoore and Earl Hautala). This will allow readers to see that after odor control treatment (Table 5-5 and Table 5-6), H2S emissions are well below odor thresholds except at the secondary clarifiers at the Route 9 site.

G5-8

For these secondary clarifiers an explanation is necessary for why as an area source, with no induced exhaust, odors are not likely to be carried beyond the fence line at the Route 9 site.

Page 3 of 5

Response to Comment G5-5

King County will consider implementation of PS Clean Air's fugitive dust recommendations during development of construction documents. As mentioned in Chapter 5 of the Final EIS, fugitive dust emissions are greatest during dry periods, periods of intense construction activity, and periods of high-wind conditions. In dry times water trucks would regularly water the construction areas for dust control. Other dust control measures would include covering or wetting of stockpiled soils and cleaning the tires and undercarriages of construction vehicles before they enter public streets.

Response to Comment G5-6

Thank you for your comment.

Response to Comment G5-7

The initial detection threshold for the odorous compound used for Brightwater is significantly lower and more stringent than, the recognition threshold, which is the typical standard for most wastewater treatment facilities. Recognition thresholds are those reached when someone smells something that they recognize, like a rotten egg smell, an can correctly identify the substance (e.g., hydrogen sulfide) as the sewage-type odor. Odors below the initial detection threshold are considered non-detectable. The initial detection threshold, or non-detection threshold used for Brightwater is 9.8 ppbV that is less than the odor threshold of 0.008 ppmV (8 ppb V) provided by PS Clean Air. The non-detection threshold on 0.8 ppbV was provided for comparison to the predicted odor impacts in Appendix 5-A, Odor and Air Quality: Treatment Plant, of the Final EIS.

Response to Comment G5-8

Secondary clarifiers are no longer in the Brightwater Treatment Plant design. The design calls for the covering of all area sources of odor.

The Puget Sound Clean Air Agency Technical Comments
On The Brightwater Treatment System EIS

5.2.2.2 Operational Impacts, Criteria Pollutant and Toxic Air Emissions, Combustion Sources

G5-9 Comment: Best Available Control Technology (BACT) for gas turbines is evolving. Today BACT for a gas turbine is considered to be 2.5 ppm for combined cycle turbines and 5 ppm for simple cycle turbines that are permanently installed. For temporary installations 9 ppm is currently BACT. These emission levels reflect natural gas combustion. The BACT analysis which must accompany the Notice of Construction application for this equipment will need to address the technology specific issues in more detail at that time.

G5-10 In the last paragraph of this turbine section, on page 25, it is stated that fuel cells are a possibility. The way this is presented suggests to the reader that this is a very remote possibility. It is suggested that a mention be made of the experimental unit now being installed at the Renton Waste Water Treatment Plant to demonstrate that they are a seriously considered alternative.

5.3.2.2 Conveyance Corridors, Operational

G5-11 Comment: Emergency generators that operate less than 500 hours per year will not require review by the Puget Sound Clean Air Agency. There will not be a BACT Analysis. [Regulation I, Section 6.03 (c)(3)(C)]

November 2002 - Odor Control for Brightwater Treatment Facility Technical Memorandum

G5-12 Page 23 – The statement is made that "Each stage of odor control will achieve 95% to 99% H2S removal…."

Comment: Recent experience in the composting industry suggests that, for odor control removal, biofilter efficiencies range from 75-90 percent, with higher efficiencies only available with above normal monitoring and management effort.

Other General Comments

Demolition Activities

G5-13 Prior to any demolition activities: (1) an asbestos survey must be performed to identify all asbestos-containing materials present, (2) a project notification must be submitted to the Puget Sound Clean Air Agency at least ten days before asbestos removal or demolition activities begin, and (3) all friable asbestos-containing materials must be removed prior to demolition. Forms may be obtained by calling 206.689.4090.

Vehicle Idling

G5-14 To reduce emissions and the exposure to toxic air contaminants by the surrounding community, do not leave trucks, cars, or construction equipment idling unused for longer periods than three minutes.

G5-15 Diesel Emissions

The Puget Sound Clean Air Agency, along with a consortium of partners, has developed the Diesel Solutions program to make diesel vehicles in this region dramatically cleaner. To reduce diesel emissions for improvement in air quality related to air toxics and fine particulate matter, we encourage the use of ultra low sulfur diesel (15 ppm sulfur), bio-diesel, or alternative fueled

Page 4 of 5

Response to Comment G5-9

Please refer to the response to Comment G5-2 in this letter.

Response to Comment G5-10

A 1.0-MW fuel cell is currently being installed at King County's South Treatment Plant in Renton. The fuel cell will be tested on both digester gas and natural gas during a 2-year demonstration period from the fall of 2003 through the fall of 2005. The data from the demonstration will be used to determine future feasibility for long-term use of fuel cells at wastewater treatment plants.

Response to Comment G5-11

The emergency generators will at a minimum meet the Tier 2 requirements of 40 CFR Part 89.

Response to Comment G5-12

The odor control design for the Final EIS no longer includes a biofilter at Route 9. The odor control proposal for both sites includes a combination of multi-stage (sodium hypochlorite, sodium hydroxide, and/or sulfuric acid) chemical scrubbers followed by activated carbon for additional odor reduction.

Response to Comment G5-13

King County will comply with all PS Clean Air's asbestos regulations.

Response to Comment G5-14

King County would comply with PS Clean Air's vehicle idling requirements to the greatest extent possible.

Response to Comment G5-15

By the time construction for Brightwater System begins, ultra-low-sulfur diesel fuel will be the standard fuel for on-road diesel.

The Puget Sound Clean Air Agency Technical Comments
On The Brightwater Treatment System EIS

G5-15 vehicles (e. g. compressed natural gas, propane, hybrid, electric and fuel cell), depending on the particular circumstances.

Open Burning

G5-16 Open burning of land clearing debris and yard or household waste is prohibited in urban areas designated as growth management areas. We discourage open burning in any areas of our jurisdiction. Generally, there are reasonable alternatives to open burning, such as mobile chipping and waste pick-up.

Page 5 of 5

Response to Comment G5-16

Thank you for your comment.

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G4
SEATTLE & KING COUNTY PUBLIC HEALTH

FINAL ENVIRONMENTAL IMPACT STATEMENT

Brightwater Regional Wastewater Treatment System

COMMENTS AND RESPONSES

Public Health
Seattle & King County
HEALTHY PEOPLE. HEALTHY COMMUNITIES.
Alonzo L. Plough, Ph.D., MPH, *Director and Health Officer*

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ENVIRONMENTAL PLANNING DIVISION

January 21, 2003

Donald Theiler, Manager
Environmental Planning
King County Wastewater Treatment Division
201 South Jackson Street, KCS-NR-0505
Seattle, WA 98104

RE: Draft Environmental Impact Statement for Brightwater Regional Wastewater Treatment System

Dear Mr. Theiler:

Thank you for the opportunity to review and comment on the Draft Environmental Impact Statement for the Brightwater Regional Wastewater Treatment System. In general, the document is very complete and comprehensive. We have made comments below supporting what is provided in the document as well as some minor suggested changes.

Odor Control

It appears that effective steps will be taken to control odors emanating from the treatment facility.

Combined Sewer Overflows

G4-1 This proposal adds capacity to help prevent overflows. As discussed in Chapter 9.3.1.3, King County would implement five strategies to reduce the occurrence of emergency overflows. If an emergency overflow occurs, proper warning signage, water quality monitoring and cleanup measures would take place.

Shellfish Beds and Water Quality

Proper precautions appear to be in place. Visual inspections of the outfall would occur every 2-5 years. There is monitoring of water quality, sediments and shellfish already in place. The affected beach area would be closed if high bacterial levels were present. The beach areas by the proposed outfalls are already closed to the commercial harvesting of shellfish.

Noise

G4-2 Pages 10-1 through 10-6 consist of what appears to be a complete list of the maximum permissible sound levels in the various jurisdictions as well as a definition of vibration. King County has no code controlling vibration, which is normally measured in inches/second, peak particle velocity, and root mean square (RMS).

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City of Seattle
Gregory J. Nickels, *Mayor*

King County
Ron Sims, *Executive*

Response to Comment G4-1

Thank you for your comment.

Response to Comment G4-2

Thank you for your comment.

Donald Theiler, Manager
January 21, 2003
Page 2

The vibration can also be thought of as ground born or structure born sound. Chapter 10 describes vibration, its perception by human beings, the various sources of vibration from this particular project as well as the impact criteria.

The multiple jurisdictions (including King County) have their noise codes represented. King County is a jurisdiction that controls construction noise adequately.

The construction impacts appear to be accurately defined and the noise impacts from the construction activities during peak construction times would most likely exceed the levels
G4-2 allowed by most jurisdictions since most jurisdictions do not consider construction impacts in noise codes. This would not be true, however, for noise from construction using tunnel-boring equipment. The tunnel boring equipment would, however, create vibration that might affect sensitive receptors. If a "cut and cover" method of tunneling is used, the vibration produced might be less, however the audible noise would be greater. In both cases for tunneling, one using tunnel boring equipment and the other, a cut and cover methodology (herein called microtunneling) would meet the King County construction noise code, so long as the construction
G4-3 takes place during daytime hours (which are defined in the DEIS).

The mitigation measures for construction appear to be adequate, however additional measures such as using ambient sensitive backup warning horns on mobile equipment, using bed lining on haul trucks and snubbing any loose items on the haul trucks would be desirable. The other equipment used on any construction site would be of a type that is the most modern and quietest available. An example would be to use hush kits on any diesel powered equipment.

G4-4 The operational noise of the Brightwater Wastewater Treatment System should not cause any unavoidable increases in the noise levels near any sensitive site. Most of the noise from the wastewater treatment plant is typically created by pumping equipment, exhaust fans and blowers. These types of systems may have specific frequency noise components that would be irritating, however such types of noise are generally treatable by using masking noise so that the predominant noise heard would be in the ambient spectrum.

G4-5 The Noise and Vibration Technical Appendix is rather sparse and in the final DEIS there should be more points at which sound level and measurements are taken. Additionally, the consultant has used a well-known metric (Ln), however this metric where "n" indicates the percentage of time a specified sound level is exceeded, is not the metric used by the various jurisdictions where the treatment plant is planned. It is useful to have the Ln metric, however the final EIS (FEIS)
G4-6 should also include the sound level metrics that are used in the various noise codes used by the jurisdictions the wastewater treatment plant affects. Another approach would be to have an accurate formula or explanation of the similarity between the Ln and the metric used by the appropriate jurisdiction. They may be the same or similar enough to be considered the same.

G4-7 The technical appendix should also contain the appropriate sound levels from not only the construction equipment to be used during the construction phase but the sound level output of the various pieces of equipment used by the wastewater treatment plant. If the information is not available at this time, this fact should be noted.

Response to Comment G4-3

Proposed construction methods for the conveyance system are described in detail in Chapter 3, with additional detail provided in Appendix 3-G, Construction Approach and Schedule, of the Final EIS. Open-cut conveyance construction is different than microtunneling and is the open-trench type piping installation that can be used at depths less than 30 feet. The assessment of greater vibration impact from tunneling than cut and cover construction is correct. The assessment of greater noise impact from cut and cover construction is correct due to the use of diesel-powered mobile equipment on the ground surface. Please also refer to the response to the Snohomish County Planning and Development Services, Comment S3-132. Please refer to Appendix 10-B, Noise and Vibration: Conveyance, of the Final EIS for additional detail. These suggestions have been included in the list of potential mitigation measures.

Response to Comment G4-4

Masking noise is suggested as a possible approach for treating tonal noise components, which may be annoying to some receptors. The preferred design approach is intended to result in lower noise levels. The preferred approach is to apply noise reductions in the frequency bands necessary and adequate to reduce tonal components of the spectrum to limited levels over the existing minimum hour ambient noise levels in the same frequency band as the tonal source. This will result in very low contribution of tonal sources to the overall noise level and difficulty in discerning the tone, even during the quietest nighttime periods.

Response to Comment G4-5

The intent of the ambient noise monitoring is to identify the range of existing noise levels and how they are distributed over a typical 24-hour period. Our best efforts were made to find locations spread over the site for which access could be

obtained. Additional monitoring locations on the site would not result in finding lower minimum, nor higher maximum, hourly noise levels. This is because the periods of minimum noise level are controlled by traffic and industrial noise sources far from the site, which are nearly constant over large areas, while the periods of highest noise level are controlled by traffic on SR-522. Standard practice for selecting monitoring locations was exercised and consists of selecting locations to avoid having nearby activities or specific sources influencing the microphone, which would not likely be part of the ambient sound in the nearest residential areas.

Response to Comment G4-6

The L_n metric is actually part of the jurisdictions' noise codes, but is not noted as such. The jurisdictions' noise levels are tabulated as "maximum permissible" sound levels in the codes, but each jurisdiction also allows for specific sound level excesses for a limited number of minutes in any 1-hour period. These allowable excesses are 5 dBA for 15 minutes in any 1 hour, 10 dBA for 5 minutes in any one-hour, and 15 dBA for 1.5 minutes in any one hour. This allows for a statistically variable sound level, like what is experienced due to normal ambient sources, such as traffic and other common sources contributing to any outdoor setting's noise level. The L_n metric was used because these limited time periods equate to the statistical L_{25} for 15 minutes, $L_{8.3}$ for 5 minutes, and $L_{2.5}$ for 1.5 minutes.

Noise levels monitored, included L_{50}, L_{25}, and L_8 levels. The L_{50} is used as the interval mean value for comparison to "maximum permissible" levels specified in the codes. The $L_{2.5}$ was not monitored because no Brightwater project elements will be impulse-type operational sound sources, which could influence the $L_{2.5}$ level. The $L_{8.3}$ level is truncated to L_8 due to limitations of the monitoring equipment.

Response to Comment G4-7

Appendix 10-A, Noise and Vibration: Treatment Plant, of the Final EIS includes more detailed information on construction equipment and plant operational noise levels. Also, please refer to the response to the Snohomish County Planning and Development Services, Comment S3-132.

Donald Theiler, Manager
January 21, 2003
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If you have any questions regarding our comments, please contact Gary Irvine, Special Projects Supervisor, at (206) 296-4784.

Sincerely,

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