Kitsap County Coordinated Water System Plan

Regional Supplement

2005 Revision

Acknowledgements

An undertaking of this magnitude is not possible without the efforts of numerous individuals and groups. This plan is a project of extensive input and a compilation of the recommendations of numerous special studies and related planning efforts.

Those of us at the Kitsap County Water Utility Coordinating Committee (WUCC) and Economic and Engineering Services, Inc. (EES) would like to pay particular tribute to those agencies and individuals listed below:

- Morgan Johnson, Chair
  Water Utility Coordinating Committee
- Members of the Kitsap County Water Utility Coordinating Committee
- Kitsap Public Utility District Staff, Bill Hahn coordinating
- Kathleen Cahall, Water Resources Manager City of Bremerton
- Mike Means, Drinking Water Program Manager Kitsap County Health District
- Washington State Department of Health Staff
  - Denise Lahmann
  - Jim Rioux
  - Jared Davis
  - Karen Klocke
- Washington State Department of Ecology Staff

December 9, 2004

Kitsap County Board of Commissioners
614 Division Street, MS-4
Port Orchard, WA 98366

Subject: Revision to the Kitsap County Coordinated Water System Plan Regional Supplement

Dear Board of County Commissioners:

On behalf of the Kitsap County Water Utility Coordinating Committee (WUCC) and HDR/EES, enclosed is the final 2004 revision to the Kitsap County Coordinated Water System Plan (CWSP) Regional Supplement for your processing and approval.

The core content of this revised CWSP document remains unchanged from the CWSP Regional Supplement developed in 1992. The revision effort was undertaken primarily to update designated service area boundaries, address changes to State laws governing water supply and resource management, and modify the regional water supply strategy to better reflect the current understanding of available water supply options.

Substantially unchanged elements of the document include the major policies, procedures, and recommendations jointly developed by and for the area's water utilities through the WUCC. The CWSP does not resolve all questions, but provides the direction and management program to address problems in a cost-effective and cooperative manner.

This revision to the CWSP Regional Supplement has undergone extensive review by WUCC members and County staff. In addition, a public meeting was held on November 18, 2004, at which no public input was received. The WUCC anticipates that the Board of County Commissioners (BOCC) will find the revision effort complete and satisfactory, allowing for BOCC approval within the prescribed timeframe. If you have any questions, please contact Bill Hahn at Kitsap Public Utility District (360-779-7656).

Sincerely,

John M. Maxwell, P.E.
Vice President
Economic and Engineering Services, Inc.

Morgan Johnson
WUCC Chair
General Manager Silverdale Water District No.16

JMM:ajr:kitsap

Enclosure

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Engineers Certificate

The technical material and data contained in this report were prepared under the supervision and direction of the undersigned, whose seals as professional engineers licensed to practice as such, are affixed below.

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Glossary of Acronyms and Terms

The following acronyms and definitions are for terms contained in or associated with material contained in the CWSP. Additional definitions may be found in Chapter 246-290 WAC, "Drinking Water Regulations of the State Board of Health" effective April 1999, Department of Health, Olympia, WA 98504.

Acronyms:

ACOE	U.S. Army Corps of Engineers
Af/yr.	Acre-feet per year
AG	Attorney General
APA	Aquifer Protection Areas
APWA	American Public Works Association
ARPA	Aquifer Recharge Protection Areas
ASR	Aquifer Storage and Recovery (or Artificial Storage and Recovery)
AWWA	The American Water Works Association
BA	Biological Assessment (ESA related)
BacT	A sample for bacterial contamination
BAT	Best Available Technology
BE	Biological Evaluation (ESA related)
BKCHD	Bremerton-Kitsap County Health District (now Kitsap County Health District)
BMP	Best Management Practices
BO	Biological Opinion
BRB	Boundary Review Board
CARA	Critical Aquifer Recharge Area
CCC	Cross Connection Control
ccf	One Hundred cubic feet
CCWF	Centennial Clean Water Fund
CERCLA	Comprehensive Environment Response, Compensation, and Liability Act (Superfund related)
CEU	Continuing Education Unit
CFR	Code of Federal Regulations
cfs	Cubic feet per second
CIP	Capital Improvement Program
Cl	Chloride, chlorine
COMPLAN	Kitsap County Comprehensive Plan
CWA	Clean Water Act (EPA)
CWSP	Coordinated Water System Plan (Chapter 70.116 RCW)
CWSSA	Critical Water Supply Service Area (Chapter 70.116 RCW & Chapter 246-293 WAC.

DCD	Department of Community Development
DNR	Department of Natural Resources, State of Washington
DOE	Department of Ecology, State of Washington
DOFW	Department of Fish and Wildlife, State of Washington
DOH	Department of Health, State of Washington
DOT/APWA	Combined standards for public works construction practices of the Washington Department of Transportation and the American Public Works Association, 1984 Edition.
Ecology	Department of Ecology, State of Washington
EIS	Environmental Impact Statement (ESA related)
EPA	United States Environmental Protection Agency
ERUs	Equivalent Residential Units (water system capacity related)
ESA	Endangered Species Act or Environmentally Sensitive Area
ESU	Evolutionary Significant Unit (ESA related)
ET	Evapotranspiration
FEMA	Federal Emergency Management Agency
FONSI	Finding of No Significant Impact
GIS	Geographic Information Systems
GMA	Growth Management Act
gpcd	Gallons per capita per day
gpd	Gallons per day
gpm	Gallons per minute
GPS	Global Positioning System
GWAC	Ground Water Advisory Committee
GWMA	Ground Water Management Area
GWMP	Ground Water Management Plan
GWUI	Ground Water Under the Influence (of surface water)
HCA	Habitat Conservation Plan
HMP	Habitat Management Plan
IBA	Initial Basin Assessment
IFIM	Instream Flow Incremental Methodology
IOU	Independently Owned Utility
IRPP	Instream Flow Protection Plan
KCDCD	Kitsap County Department of Community Development
KCHD	Kitsap County Health District (formerly Bremerton-Kitsap County Health District)
LUD	Local Utility District

MCL	Maximum Contaminant Level
MGD	Million gallons per day
MISF	Minimum Instream Flow
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MSL	Mean Sea Level
MWL	Municipal Water Law
MWS	Municipal Water Supply or Municipal Water Supplier
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NPL	National Priority List (Superfund site)
NTNC	Non-transient Non-Community
OFM	Office of Financial Management
pH	Measure of the acid \ base nature of a solution
POD	Point of Diversion (Water Rights)
POU	Place of Use or Purpose of Use (Water Rights)
POW	Point of Withdrawal (Water Rights)
ppb	Parts per billion
ppm	Parts per million
PSCOG	Puget Sound Council of Government
PSWQA	Puget Sound Water Quality Authority
PWS	Public Water System or Supply
PWTF	Public Works Trust Fund
Qa	Water right annual allotment in acre-feet per year
Qi	Water right allowable instantaneous flow rate in gpm (groundwater) or cfs (surface water)
RCRA	Resource Conservation and Recovery Act (Superfund related)
RCW	Revised Code of Washington (law)
ROE	Report of Exam (water right related)
SDWA	Federal Safe Drinking Water Act
SEPA	State Environmental Policy Act
SOC	Synthetic Organic Chemicals
SMA	Satellite Management Agency
SSMP	Satellite System Management Program
SSWMP	Surface and Storm Water Management Plan
SWSMP	Small Water System Management Program
TDS	Total Dissolved Solids

TMDL	Total Maximum Daily Load (CWA)
TNC	Transient Non-Community
TOT	Time of Travel
TSCA	Toxic Substance Control Act
UFC	Uniform Fire Code
UGA	Urban Growth Area
ULID	Utility Local Improvement District
USFS	United States Forest Service
USGS	United States Geological Survey
USRP	Utility Service Review Procedure (See Designated Purveyor in CWSP text).
USFWS	United States Fish and Wildlife Service
UT (or UST)	Underground Storage Tanks
UWIN	Unique Well Identification Number
VOC	Volatile Organic Chemical
WAC	Washington Administrative Code or Washington Association of Counties / Cities
WATERPAK	Water Purveyors Association of Kitsap
WEC	Washington Environmental Council
WHPP	Wellhead Protection Program
WRIA	Water Resource Inventory Area
WRIS	Water Right Information System
WSP	Water System Plan
WUCC	Kitsap County Water Utilities Coordinating Committee
WWUC	Washington Water Utility Council

Terms:

Classes of Public Water Systems: Currently, public water systems are classified into two categories as follows:

Group A - serving fifteen or more customers or twenty-five or more people / day for sixty or more days / year.

Group B - serving less than fifteen connections (but more than one single family residence) and less than twenty-five people for sixty days or more / year or less than fifteen connections and any number of people for less than sixty days / year.

Group A systems are divided into a series of subgroups as diagrammed in Exhibit 1 at the end of this Glossary of Acronyms and Terms section. A full description of the classes of systems is contained in WAC 246-290-010.

Previously, public water systems were classified into four categories, as shown below:

Class 1 - serving 100 or more services
Class 2 - serving between 10-99 services
Class 3 - transient, non-community water system of 25 to 299 on any given day
Class 4 - serving between 2-9 services

Coordination Act: Public Water System Coordination Act as per Chapter 70.116RCW.

Designated Purveyor or Designated Utility: A water purveyor or water utility system identified to provide water service to a given area. When willing to provide the service in a timely and reasonable manner, the designated purveyor is assigned an exclusive right to provide public water service to the area and is required to include the area within its approved Water System Plan.

Expanding Water Systems: Those public water systems installing additions, extensions, changes, or alterations to their existing source, transmission, storage, or distribution facilities which will enable the system to increase its existing service area in size. New individual retail or direct service connections onto an existing distribution system shall not be considered an expansion of the public water system.

Fire Flow: The rate of water delivery needed for the sole purpose of fighting fires. The fire flow volume shall be in addition to the requirements of the water system for domestic demand, and a 20-psi residual pressure should be maintained throughout the system under combined maximum demand flow conditions.

Franchise Area: Non-exclusive area in which a utility is permitted by the County to extend facilities in public rights-of-way. A franchise area is not equivalent to a service area.

Interlocal Agreement: See Service Area Agreement.

Intertie: A physical connection between individual water systems, which allows water supply to be transferred in one or both directions. An intertie can be established as a primary source, secondary or peaking supply, or emergency supply. Ordinarily, the use of an intertie is governed by a written agreement or contract between the utilities. A modification to water rights issued by Ecology may also be required.

Land Use Designation: The land use(s) allowed in a geographical area by right or permit, as provided in the Kitsap County Comprehensive Plan, Zoning Ordinance, and Sub-Area Plans.

Level of Service: Operational features, such as pressure, flow, reliability, etc., provided to the customer by the water system.

Municipal Water Law: The 2003 Municipal Water Supply – Efficiency Requirements Act (i.e., 2E2SHB 1338) is part of a multi-year effort to reform the state's water laws. The law directs the Department of Health to adopt a new water use efficiency rule by the end of 2005. It also provides utilities with certainty and flexibility in the exercise of water rights.

New Construction: Any addition of supply, transmission, distribution or storage facilities, either in a new water system or an expanding water system, which provides a capability to serve additional dwelling units or other buildings.

Public Water System : Any system providing water intended for, or used for, human consumption or other domestic uses. It includes, but is not limited to, the source, treatment for purifying purposes only, storage, transmission, pumping and distribution facilities where water is furnished to any community, or number of individuals, or is made available to the public for human consumption or domestic use, but excluding water systems serving two residences or a system with four or fewer connections, all of which serve residences on the same farm.

Remote System: A public water system, located within the designated service area of a utility, that is detached / distant from the primary facilities of the utility. A remote system has its own source of supply.

Satellite System: A public water system located within that portion of the Critical Water Supply Service Area not designated as a contiguous service area for any existing utility. Multiple satellite systems may be owned and / or operated by a single utility without necessity of physical connection between systems.

Satellite System Management Agency: An organization, individual, or other entity, which is pre-qualified, as provided by DOH, to render services such as operation, maintenance, development, or management of water systems in the State of Washington.

Satellite System Management Program: A program established to provide for technical, contract, and other services to meet management needs of satellite systems.

Service Area A geographical area assigned to a water purveyor for the purpose of providing both current and future public water service. Boundaries are defined by agreements among adjacent utilities and are recorded on a set of maps on file with the Kitsap County Health District. Water service provided within designated service areas must be consistent with local land use plans.

Service Area Agreement: An interlocal agreement signed by water utilities, which identifies the service area for which the utility has retail water service responsibility.

Service Connection: A physical connection through which water may be delivered to a customer for discretionary use. Unless otherwise indicated, all such connections, whether currently in use or not, shall be considered as a service connection. The service connection defines the limit of the water utility's responsibility for system design and operation unless otherwise provided for in the water utility's condition of service policies.

Utility customers such as mobile home parks, planned unit developments, condominiums, apartment buildings, industrial /commercial sites, or other similar complexes are generally considered exterior to the water system. In such cases, the purveyor shall be required to meet

design standards for water systems up to the point of the service connection to the customer. Beyond that point, the applicable plumbing and building codes, fire codes, County health regulations, and local ordinances are deemed to be sufficient to protect the public health and to ensure adequate water service. These customers are not themselves considered herein as water purveyors unless specifically designated as such by DOH.

Small Water System Management Program: All non-community and community water systems not required to complete a Water System Plan must develop a Small Water System Management Program, providing information similar to that documented in a Water System Plan. Detailed requirements can be found in WAC 246-290-105.

Utility Service Review Procedure: An administrative procedure established under local agency jurisdiction to identify the water purveyor best able to serve an area where new public water service is requested. (See Designated Purveyor in the CWSP text).

Water Purveyors Association of Kitsap: An organization of the interested water purveyors of Kitsap County.

Water System Plan: A written plan prepared for a particular water system and service area, which identifies a schedule of, needed improvements, a financial program, and an operations program. A water system, which is expanding within a designated service area, may be required to include other elements in its plan. Details of Water System Plan requirements can be found in WAC 246-290-100.

Section
1 Summary

1.1 Introduction

In order to preserve and protect Kitsap County's public water supply and groundwater resources, the Kitsap County Board of Commissioners entered into Resolution 77-1987 in March 1987, see **Exhibit 2-2**. This resolution called for the development of a long range, comprehensive resource plan to maximize efficient and effective development of all Kitsap County public water supply systems through the coordination of resource management and planning. In response the Kitsap County Water Utility Coordinating Committee (WUCC) was established and the initial Kitsap County Water System Plan (CWSP) was completed in November 1992. The WUCC consists of representatives of each purveyor serving more than 50 customers (who chooses to participate), the county legislative authority (county commissioners), the Kitsap County Department of Community Development (KCDCD), and the Kitsap County Health District (KCHD). See **Exhibit 1-1** for a list of WUCC purveyor members.

The 2005 update to the CWSP Regional Supplement, has been prepared by the WUCC. Kitsap County has designated KPUD with countywide responsibility for technical, managerial, financial, operational, and support services necessary to provide satisfactory water resource planning, development, protection, and utility service. In that capacity the KPUD has served as the lead agency in the development of this document. This CWSP Update draws on the knowledge and expertise of all WUCC member organizations; including individual studies, projects, and negotiations, all with the primary objective of providing for the public drinking water supply needs of Kitsap County while achieving coordination between water service and the Growth Management Act (GMA).

This CWSP is not a generalized planning document, but rather a detailed local and state management program developed pursuant to **Chapter 70.116 RCW** and **Chapter 246-293 WAC**. This CWSP Update provides a further refinement of process and strategy for the existing water utilities to define their role in a program to meet the County's Comprehensive Plan. This regional water plan represents the collective views of the WUCC and integrates the documented views of other State and local governments. The CWSP, when integrated with individual water system plans (WSPs) and the GMA Comprehensive Plan, presents a significant piece of the larger resource and growth management strategy for the County's future.

This CWSP is especially significant in that it represents a cooperative effort among WUCC members, the State Department of Health (DOH), and the State Department of Ecology (Ecology).

The CWSP provides a process and strategy for Kitsap County water utilities to define their role in a program consistent with adopted land

The CWSP Process defines the role of water utilities that is consistent with adopted land use policies and the area's projected growth strategy.

use policies and projected growth strategy of the area. The regional water supply strategy represents the collective views of the WUCC and integrates the findings of the Kitsap County Ground Water Management Plan (GWMP) and the Kitsap County Initial Basin Assessment. Although the CWSP is not the total and final water resource management plan for the area, it represents a significant piece of the larger resource and growth management plan.

1.2 Recommendations

The WUCC recommends and provides for the following:

1.2.1 Management Area

The CWSP specifically plans for the provision of public water supply throughout Kitsap County (**Exhibit 2-3** shows current land use designations). The CWSP and the Public Water System Coordination Act assign responsibility for planning, designing, financing, constructing, and operating all public water systems (see **WAC 246.290.02**) in the designated areas.

1.2.2 Supply Area

The source of supply for the CWSP area is a combination of ground waters, and the City of Bremerton's Union River surface supply. As the primary source, ground water provides approximately 80% of the potable water for the county. The City of Bremerton's Union River Supply is the only significant surface water supply. An evaluation is included of potential regional supplies including sources from outside the Water Resource Inventory Area (WIRA), wastewater reuse, aquifer storage and recovery, recharge enhancement, and desalinization.

1.2.3 Interties

Interties between existing water utilities will allow conjunctive use of surface and ground water, emergency supply, and wholesale delivery of supply in accordance with the CWSP.

1.2.4 Water Supply and Land Use

The CWSP has incorporated the land use and projected development program of the county and the cities to the degree that they have been documented. The plan has been updated based on county and city comprehensive plans and other ordinances developed in conjunction with the GMA.

1.2.5 Designated Service Area/Utility Review Procedure

The designated retail water service areas represent the geographical area where the identified utility has accepted responsibility to provide a "safe and adequate" water supply in a "timely and reasonable manner." The appeals process of this CWSP is the

process that will be used to resolve any dispute over retail service area. A new public water system will not be permitted unless the designated water system is "unable or unwilling" to provide water service in a "timely and reasonable" manner.

Within designated retail service areas, an applicant will be referred to the designated utility to arrange for the desired level of utility service. In the event the utility cannot provide timely service to the proposed activity, it will advise the applicant of the utility's design standards and discuss the feasibility of creating a new water system to serve the project. If the applicant does not install a water system to the designated utility's standards, then the interim system must at least meet the minimum Group A or Group B standards, as prescribed by the CWSP.

As a condition of the final plat, short plat, or land use approval, where facilities less than the designated utility's design standards are utilized, the designated utility will review with the applicant the potential of paying additional costs at a later date in order to upgrade piping and other facilities to integrate the interim system with the utility. Also at the time of plat, short plat, or land use approval, the County will ensure that a covenant is entered on the title report for each parcel. The covenant will acknowledge that the owner of the parcel may be responsible for paying to upgrade interim water utility facilities to the designated utility's design standards when it is connected to the designated utility at some time in the future. This covenant will remain on the property title report until the interim system is incorporated in the designated utility's system.

When a new system is formed, the approving agency should require a demonstration of financial viability and system capacity for system operation and management. Recommended guidelines for determining financial viability are set forth in the **State Department of Health Financial Viability Manual (DOH Publication # 331-104, March 1995)**.

Some water purveyors provide or may in the future provide wholesale water to other water systems. Such purveyors will designate the area in which they are willing to provide wholesale water service. To maximize flexibility, wholesale water service areas may overlap, as a water system may want to have multiple outside wholesale water supplies. Wholesale water sales will be conducted based on individual agreements between the parties involved.

1.2.6 Classification of Existing Systems

DOH classifies Group-A water systems employing the following criteria:

OPERATING PERMIT PROGRAM PLAN ADEQUACY TABLE

Group A Public Water System Operating Permit Color	Adequacy Response Growth	Existing Uses	Compliance Status
Green	Yes*	Yes	Substantially in compliance as long as approved number of connections is not exceeded.
Yellow	Yes**	Yes	Substantially in compliance except water system notified to submit water system plan, but has not satisfied planning requirement and/or is under a compliance agreement for a state significant non-complier (SSNC) violation.
Blue	No	Yes	Substantially in compliance except water system does not meet design approval or has exceeded number of approved connections. System is operating outside our design approval process.
Red	No	No	Substantial non-compliance. Not adequate.

* Up to number of approved connections

** Up to the number of approved connections unless otherwise limited by a compliance agreement

1.2.7 Satellite Management and Receivership

Management for existing category (2) or (3) or new, remote or satellite systems, if not done by a designated utility, must be provided by an approved SMA. For new systems, it will be the applicant's responsibility to pick an SMA from the approved list provided by DOH and available at the KCHD.

Existing state law provides for the county to be the "receiver of last resort" of any of the existing public water systems in the county that are unable to comply with the federal and state regulations and customer service requirements specifically outlined in federal, state, and local (CWSP) procedures. The **GMA, Section 63** refers to compliance as evidence of an "adequate water supply."

The CWSP provides for a designated utility to assume lead responsibility in lieu of the county for correcting the deficiencies of a small system if receivership is invoked within its designated retail service area.

If the designated utility does not assume responsibility for a receivership system, the goal of the CWSP is for an approved SMA to accept responsibility. In the event an SMA organization is not interested, KPUD will accept receivership responsibility. A Memorandum of Understanding between Kitsap County and KPUD to define this relationship was developed in May 1992. See **Exhibit 5-5**. This memorandum clarifies that KPUD will use its best efforts to facilitate financially feasible solutions for water systems placed into receivership.

1.2.8 Water Conservation and Monitoring

Washington State DOH Conservation and Planning Requirements (DOH publication #331-0000, March 1994) were incorporated in developing the demand forecast for the CWSP. Implementation of a joint utility based-regional water conservation program is in progress. The Water Purveyors Association of Kitsap County (WATERPAK, an association of the larger purveyors in the County) have established a task force on conservation that plans, implements, and evaluates joint conservation measures. Conservation programs are being included in the preparation or update of individual water system plans. KPUD is assigned lead responsibility for coordinating implementation of a regional program. WATERPAK, with funding assistance from KPUD, has initiated a regional component of water conservation in accordance with **Chapter 246.290 WAC**. The program includes evaluation of results. The Conservation Task Force of WATERPAK coordinates with the DOH Conservation Specialists in carrying out the regional conservation program. The objective of the regional conservation program is to coordinate and standardize the conservation planning requirements for individual systems. In accordance with the DOH Water System Planning Handbook, if a system can demonstrate that a regional planning organization is performing conservation measures for the individual system, the system will not be required to duplicate those measures, provided the benefits to the individual system from the regional effort equal or exceed the benefits which could reasonably be expected from implementation of the measures by the individual system. Some WATERPAK members belong to the Puget Sound Conservation Coalition and coordinate WATERPAK efforts with Coalition programs. DOH is in the process of developing rules for the implementation of conservation and efficiency standards required by the 2003 Municipal Water Supply – Efficiency Act, commonly referred to as the Municipal Water Law (MWL). When completed, those requirements will be incorporated into WATERPAK and applicable individual water system conservation programs.

1.2.9 Minimum Design Standards

The Minimum Design Standards are discussed in **Section 4**. They were developed by the WUCC, adopted by the Kitsap County Commissioners in the original CWSP and are applied countywide. The recommended Design Standards reference urban and rural areas and are generally consistent with the GMA criteria on infrastructure planning. County Urban growth area management boundaries are used in implementation of the standards to designate appropriate, minimum levels of service.

1.2.10 Individual Wells and Ground Water Management

Water service in urban growth areas should be provided by utilities with retail service areas designated through the CWSP process. Individual wells, however, may be constructed on parcels meeting the KCHD siting criteria. As part of the well application process for parcels in retail service areas, KCHD will require the applicant to obtain a feasibility of water service statement from the applicable water purveyor. the applicant retains the permissive judgment to either drill a private well or connect to the utility. The Initial Basin Assessments for Kitsap County and WRIA 15 (Basin Assessments) found that ground water availability varies throughout the County. The Basin Assessments and the Kitsap County Ground Water Management Plan (GWMP) project that water is available for near term growth requirements. The Basin Assessments and the GWMP also recognize the need for additional data collection and analysis.

The participating WUCC utilities should continue to collect, record, analyze and utilize specified ground water, production, and customer usage data for the data management program (See **Section 10** and **Appendix K)**.

1.2.11 Regional Supply Strategy

A Regional Supply strategy for water resource management and development has been developed.

The CWSP has developed a regional strategy for water resource management and development. Based on available data generated through the CWSP, the Kitsap GWMP, and the Basin Assessments, ground water supplies appear to provide the best near-term supply alternative. Continued development of local ground water supplies is recommended as KPUD and other purveyors continue drilling throughout the county to evaluate for long-term regional supplies. The uncertainty of water right application processing, surface/ground water continuity issues, and ESA issues cast concern on the feasibility of ground water development plans, even if significant resources are identified at a regional or sub-area level.

The proposed reliance on ground water, coupled with current uncertainties regarding water rights laws and policies, poses a dilemma for the future availability of supply. Based on the results of the GWMP, the Basin Assessments, and the conjunctive use supply strategy outlined herein, reservation of public waters, as prescribed by **WAC 173-590**, should be submitted to ensure the issuance of future ground water rights.

Ecology in 1992 noted that no action would be taken on water rights reservation applications until an additional regional water resource planning process was conducted. This regional planning process will need to have active involvement of all interested parties and fully consider regional alternatives. It should be noted that Kitsap County requested such an evaluation as a pilot area under the regional planning process empowered by **Chapter 90.54 RCW**, but was not selected. The 1998 legislature enacted guidelines for basin planning that most likely will result in coordinated planning for all of WIRA 15 (the Kitsap Peninsula). Supporting data for the Water Rights Reservation process is included in the CWSP.

In order to maintain the utmost flexibility in accepting regional ground water, surface water, or conjunctive use supply strategies, a regional transmission network composed of piping, pump stations, and reservoirs may be necessary. A series of interties should also be explored. **Section 9** will address these possibilities. The County Comprehensive Plan, in response to the Growth Management Act, will concentrate growth around Dyes Inlet and Sinclair Inlet. Consequently, it will be necessary to develop water sources in the surrounding parts of the county and establish transmission mains to move the water to where growth is occurring.

A regional supply system to meet the growth management needs of Kitsap County for public water supply will require continuing evaluation to establish the most cost-effective program consistent with public policy.

1.2.12 Data Management

Each major local government and/or division is currently pursuing a coordinated approach to data management. This approach is designed to preclude duplications of effort, repetition of similar data collection efforts, and confusion or disagreement over facts and interpretations of scientific data.

At the state level, the Departments of Ecology, Health, Natural Resources, Wildlife, Fisheries, and Community Development are developing a uniform approach. At the county level, Kitsap County, KCHD, along with several cities, KPUD, and some water/sewer districts, have begun to develop a coordinated Geographic Information System (GIS) and data management system. It is in the best interests of the county, the cities, KCHD, and utilities to complete a joint needs assessment and then undertake a separate but coordinated local government data collection and management program. A generalized outline of the water monitoring program is contained in **Appendix K**.

1.2.13 Administrative Framework

Implementation of the CWSP requires participation by all members of the WUCC. The CWSP is the County's regional public water plan. All related decisions by local or state government are guided by the plan.

The Utility Service Review Procedure (USRP), shown in **Exhibit 5-1**, represents how the county anticipates administering its responsibilities. The water utilities will be responsible for updating the Water System Plans for their designated areas in accordance with DOH regulations. KCHD is responsible for Service Area Coordination including Satellite Management Agencies (SMAs).

1.2.14 Plan Implementation

The following identifies the primary requirements for implementing the revisions identified in this 2004 Update to the CWSP Regional Supplement. The program is designed to be both responsive to existing needs and to place responsibility on designated

agencies to establish accountability. The acceptance of accountability should be verified through appropriate intergovernmental agreements or letters of understanding.

A number of programs and activities vital to the provision of efficient and reliable utility service in Kitsap County have been identified. Most of these programs and activities are presented in **Exhibit 1-2**. Each water purveyor should assist in the implementation of the CWSP.

Once approved by the WUCC, this CWSP Revision will be reviewed by Kitsap County for conformance with county and other applicable plans and policies, revised if necessary, and submitted to DOH for approval pursuant to **Chapter 70.116 RCW**.

The WUCC and individual member agencies should assist DOH, as requested, in the resolution of unresolved retail service area conflicts to ensure that retail service areas are consistent with water utility service objectives of the county and/or city of jurisdiction.

Periodic meetings of the WUCC should be scheduled to review CWSP implementation and need for revision.

The minimum water systems standards presented in Section 4 should be reviewed as necessary by a review committee of the WUCC. Recommended revisions should be submitted by the WUCC to the County Commissioners for adoption.

The objectives and procedures outlined in the CWSP are considered to be reasonable and achievable by all properly operated water systems. Repeated failure by a system to provide safe, reliable, and minimum levels of water service, as measured by the CWSP criteria, should serve as a basis to evaluate viability of the system. The viability test described in the CWSP and specified by DOH should be applied. Non-viable systems should be candidates for receivership, voluntary transfer of ownership, or merger proceedings.

This CWSP should be revised and updated as necessary and as directed by DOH, as prescribed by **Chapter 70.116 RCW**.

Exhibit 1-1
Water Utility Coordinating Committee Purveyor Members

System Name	Mail Address	City	State	Zip
Annapolis Water District	2924 Lund Ave SE	Port Orchard	WA	98366
Apex Water Supply	P.O. Box 4520	Bremerton	WA	98312
Bainbridge Island, City of	7305 Hidden Cove Road	Bainbridge Island	WA	98110
Bear Cub Water Association	P.O. Box 933	Port Orchard	WA	98366
Bethel East	PO Box 123	Port Orchard	WA	98366
Bill Point Water	8915 Day RD	Bainbridge Island	WA	98110
Bremerton, City of	3027 Olympus Drive	Bremerton	WA	98310
Cedar Glen M/H Park	16300 State Highway #305	Poulsbo	WA	98370
Dawn Park Water Co Inc	PO Box 493	Silverdale	WA	98383
Emerald Heights Water	5400 Diamond DR NE	Bainbridge Island	WA	98110
Erland Point Water Co	P.O. Box 644	Silverdale	WA	98383
Frog Pond Waters Inc	4603 Union Bay Place NE	Seattle	WA	98105
Glenwood Station	4978 SW Lake Flora Rd	Port Orchard	WA	98366
Holly Water	678 Alan King Road W	Seabeck	WA	98380
Island Lake Water Co	P.O. Box 1085	Poulsbo	WA	98370
Island Utilities	1325 Fourth Ave, 10th Floor	Seattle	WA	98101
Jackson Park	1400 Faragut Ave	Bremerton	WA	98314
Kitsap West M/H Park	3370 SE Bielmeir RD #5	Port Orchard	WA	98366
Kitsap Public Utility District	PO Box 1989	Poulsbo	WA	98370
Mainland View Manor Water Sys	7277 Perimeter Road, #209	Seattle	WA	98108
Manchester Water District	P.O. Box 98	Manchester	WA	98353
McCormick Woods	216Prospect St	Port Orchard	WA	98366
Meadowmeer Water Service	P.O. Box 10483	Bainbridge Island	WA	98110
Naval Undersea Warfare Center	Bldg 825, Code 1432	Keyport	WA	98345
North Bainbridge Water Co	P.O. Box 4766	Bainbridge Island	WA	98110
North Perry Ave Water Dist	P.O. Box 2183	Bremerton	WA	98310
Olympic View Mobile Manor	PO Box 82750	Kenmore	WA	98028
Pine Lake M/H Est 1-3	P.O. Box 44427	Tacoma	WA	98444
Port Madison Water Co.	15961 Eucid Ave NE	Bainbridge Island	WA	98310
Port Orchard, City of	216 Prospect ST	Port Orchard	WA	98366
Poulsbo, City of	P.O. Box 2275	Poulsbo	WA	98370
Priddy Vista	P.O. Box 417	Seabeck	WA	98380
Puget Sound Naval Shipyard	1400 Faragut Avenue	Bremerton	WA	98314
Rocky Point Water Dist. 12	P.O. Box 4318	Bremerton	WA	98312
Sandy Hook Community	P.O. Box 778	Poulsbo	WA	98370
Silverdale Water District No 16	P.O. Box 493	Silverdale	WA	98383
S'klallam Upper	31912 Little Boston Rd NE	Kingston	WA	98346
S'kllalam Lower	31912 Little Boston Rd NE	Kingston	WA	98346
South Bainbridge Water	4573 Pt. White Dr.	Bainbridge Island	WA	98110
SUBASE Bangor	SUBASE Bangor, Code 821	Silverdale	WA	98315
Sunnyslope Water District	5693 SW Rhododendron Drive	Port Orchard	WA	98366
Surfrest Park Water Co.	565 Surfcrest Ave. NE	Poulsbo	WA	98370
Tracyton Water	3027 Olympus Dr.	Bremerton	WA	98310
Viewside Community Water	P.O. Box 485	Poulsbo	WA	98370
WA Water Services	P.O. Box 336	Gig Harbor	WA	98335

Exhibit 1-2
Kitsap County CWSP Programs and Activities

Programs & Activities Program Elements	Responsibility Lead	 Support
A. Plan revision adoption		
1. WUCC approval	WUCC	Consultant
2. County certification	County	WUCC
3. DOH approval	DOH	WUCC
B. Individual water system plan updates	Utilities	DOH
C. Service Area conflict resolution	KCHD	WUCC
D. Satellite System program		
1. Statewide regulations	DOH	County
2. Designate agency(s)	DOH	KCHD
3. Implement program	SMAs	KCHD
E. Utility Service Review Program		
1. Implementation	County	Utilities
2. Appeal process	County	WUCC
F. Minimum Design Standards Revision		
1. WUCC Draft Changes	WUCC	KCHD
2. County adoption	County	KCHD
3. Utility implementation	Utilities	KCHD
G. Classify systems		
1. Viability Test	WUCC	County / DOH
2. Evaluate systems	KCHD	DOH
H. Data Management Program	KPUD	Utilities
I. Supply Systems		
1. Continue local groundwater development	Utility	KCHD / DOH / County DCD
2. Pursue groundwater test well drilling	KPUD	Utilities
3. Groundwater level monitoring	Utilities	KPUD
4. Groundwater quality monitoring	Utilities	KCHD
5. Monitoring results reported to database	Utilities	KPUD / KCHD / County DCD
6. Evaluate Pierce/Mason Co. Supply Coordination	KPUD	WUCC
7. Negotiate Intertie Agreements	Utilities	WUCC
& Construct Interties	Utilities	WUCC
9. Initiate Water Rights Reservation Process	WUCC	DOH/Ecology
J. Water Conservation Program	Utilities	WATERPAK / County DCD

Section

2 Coordinated Water System Plan Process

2.1 Introduction

The Public Water System Coordination Act, enacted in 1977, modified in 1991 and 1995, and codified as **Chapter 70.116 RCW**, establishes a procedure for the state's water utilities to coordinate their planning and construction programs with adjacent water utilities and other local governmental activities including planning under the Growth Management Act (GMA). This Act specifies that the Department of Health (DOH) (formerly under the Department of Social and Health Services) or the county legislative authority may declare an area within a county as a Critical Water Supply Service Area (CWSSA). This declaration is based upon the findings of a Preliminary Assessment identifying problems related to inadequate water quality, unreliable service, or lack of coordinated planning.

In 1971, the State Legislature enacted the Water Resource Act, **Chapter 90.54 RCW**, which set forth fundamentals of water resource policy to ensure the waters of the state will be protected and fully used for the greatest benefit of the people of the state. Subsequently, "Procedures Relating to the Reservation of Water for Future Public Water Supply," **Chapter 173-590 WAC**, were established. These procedures are available to public water systems within a geographical area for use in reserving water rights required to meet their projected domestic needs over the next 50 years. This program is administered by the Department of Ecology (Ecology) in an effort to resolve competing water use activities within a geographical area and establish a management system that will ensure that an efficient overall water resource program is developed. The 1997 and 1998 Legislatures passed the Integrated Watershed Management amendments to Chapters 43 and 90 of the Revised Code of Washington (RCW). The resulting program is commonly referred to as “Basin Planning” and is conducted on a Water Resource Inventory Area (WIRA) or multi-WIRA basis. The amendments impact on the water reservation program is yet to be determined.

The Public Water System Coordination Act and the Water Rights Reservation processes may be used individually or in combination by the local public water utilities. Implementation of either of these laws requires that a Coordinated Water System Plan (CWSP) be prepared for the county. The Kitsap County CWSP was prepared in accordance with the requirements of both laws. It consists of a Regional Supplement together with a compilation of water system plans prepared by each expanding water utility, which are attached by reference only. This document is the first major revision to the CWSP Regional Supplement since 1992. In addition to other purposes, the current revision is designed to make the CWSP consistent with the Kitsap County and associated city comprehensive plans.

2.2 Preliminary Assessment

Kitsap County initiated action toward development of a CWSP through the joint preparation of a Preliminary Assessment by the Kitsap County Department of Community Development

(KCDCD) and the Kitsap Public Utility District (KPUD). This report, titled "Preliminary Assessment of Water Resource and Public Water Services Issues in Kitsap County" was completed and issued on April 15, 1986. The intent was for the assessment to evaluate conditions that might require utilization of the CWSP process for water system planning and water rights reservation and preparation of a Ground Water Management Plan (**GWMP**). The CWSP program is administered by the DOH and the **GWMP** process is administered by Ecology. Efforts were made to facilitate the simultaneous initiation and coordination of both programs.

Several concerns were identified in the Preliminary Assessment. The major conclusions and recommendations of the Preliminary Assessment are extracted and reprinted as **Exhibit 2-1**. Among the conclusions was the realization that the proliferation of small public water systems was occurring at an alarming rate. There were 450 public water systems in the county in 1978 and 803 public water systems as of April 1986, or about eight percent of the total water systems in the state. By 1996 the number had increased to 1,096 of which 868 were group B water systems. In addition, with the exception of the City of Bremerton, most public water systems throughout the county utilize ground water supplies, however, a few small systems still depend on springs or dug wells. The reliance upon ground water supplies increased from 60 percent of the total water use in 1978 to approximately 80 percent in 1986. The rapid growth predicted for the county places increased significance on the development of reliable water supplies. Shortly before development of the Preliminary Assessment, Ecology released draft regulations for the In-stream Resources Protection Program, which severely limits the development of Olympic Peninsula surface supplies for public water use within Kitsap County. It appeared necessary to coordinate the water supply development, protection, and transmission throughout the county. Therefore, the Preliminary Assessment identified several issues most appropriately solved by implementation of the Coordination Act. Subsequently, in 1999, Ecology denied water rights applications submitted in the 1950s by KPUD and the City of Bremerton on the Duckabush and Hamma Hamma Rivers, respectively. These denials illuminate the increasing importance of countywide coordination of water supplies.

An Interlocal Agreement was prepared between the county and KPUD, establishing KPUD as the local agency responsible for development of a scope of work, obtaining grant funding for the program, and administering all activities related to this effort. Discussions were conducted among the county, KPUD, and DOH over several weeks to establish the criteria and conditions associated with the CWSP. Once project funding was secured and based on the conclusions of the Preliminary Assessment, the Kitsap County Commissioners declared all of Kitsap County a CWSSA through **Resolution No. 77-1987, dated March 2, 1987** (shown in **Exhibit 2-2**). **Exhibit 2-3** shows a vicinity map and the Kitsap County boundary, which serves as the external boundary for the CWSP.

By this action, the Public Water System Coordination Act was invoked. A Water Utility Coordinating Committee (WUCC) was formed, consisting of representatives of all purveyors with ten or more service connections, as well as representatives from Kitsap County government and DOH. All purveyors with 50 or more services were voting representatives on the WUCC. All other purveyors participated on the WUCC in an advisory capacity.

WUCC - A committee consisting of water purveyors, Kitsap County, and DOH.

2.3 1992 CWSP Preparation

CWSP - Composed of individual system plans and a supplement of regional issues.

Preparation of the CWSP involved the joint efforts of participating local WUCC members, county agencies, and KPUD staff through approximately four years of meetings. In addition, special meetings were held by subcommittees of the WUCC to address issues such as facility design standards and specifications, and the appeals process.

The WUCC proposed several administrative procedures organized to provide improved coordination of new development and to restrict the proliferation of small public water systems. These procedures included the development of Future Service Area Boundaries, Minimum Design Standards, Utility Service Review Procedures, Appeals Procedures, and the Satellite System Management Agency (SSMA) program. These procedures were presented to the County Commissioners in 1988 to adopt on an interim basis while other regional supply issues were being addressed. The intent was to implement key procedures on an interim basis and identify needed modifications, additions, or deletions before acceptance of the final CWSP. A delay in the adoption of the interim procedures occurred due to several issues of significance: difficulties in the approval process; the inability to obtain water rights from Ecology; annexation conditions prescribed by some cities within their future service area; challenges to design standards; and the requirements of the 1990 Growth Management Act.

On June 4, 1990, the County Commissioners adopted **Resolution No. 228-1990 and Ordinance No. 134** which put the interim procedures into effect. These documents are included as **Exhibits 2-4** and **2-5**, respectively. As of that date, existing water systems were considered to be utilities with a DOH approved water system plan and properties served by existing distribution systems. Developments given preliminary plat approval before June 4, 1990 with properties served by distribution systems for proposed or phased developments which submitted written information for review or received approval of their water system facilities, well site locations, plans, and specifications from DOH and/or the local health jurisdictions were also considered to be an existing water system. The interim procedures underwent slight changes based upon further review by the WUCC. The final procedures were included in the CWSP.

The following paragraphs summarize excerpts from the 1992 CWSP that describe the areas which received particular emphasis.

2.3.1 Future Service Area

Each utility was requested, through correspondence and during the WUCC meetings, to plot its existing and future service area boundaries on a map. All Group A and B water systems (previously designated as Class 1, 2, 3, and 4 systems) were contacted by letter, requesting identification of their proposed future service areas and/or their intention to expand. Future service areas were those likely to be served by the utility within the next ten years and where expansion was consistent with applicable comprehensive land use planning. The future service area boundaries of the larger Group A systems and the smaller systems with intent to expand were plotted on base maps to identify conflicting areas. Those utilities that did not identify their future service area were assumed not to

be interested in expanding. For those utilities, the future service area was assumed to correspond to the existing service area. A standard agreement was formulated to allow utilities to recognize adjacent service areas by reference to service area maps.

Several overlaps in future service areas were initially identified early in the study process. All but two overlaps were resolved during preparation of the 1992 CWSP. Additional development or utility expansion within these contested overlap service areas was not allowed until the conflict was resolved. This provision did not affect the remaining non-conflict areas of the utilities. After the adoption of the CWSP, new contested overlaps occurred which were channeled through the resolution process. The combination of a utility's existing service area (parcels with distribution mains already existing) and declared future service was referred to as the utility's service area. That service area was shown on the service area maps without distinction as to existing or future service area delineation. The service area did not always correspond to the incorporated boundaries of government run utilities. Since development of the 1992 CWSP, an additional requirement is that water service areas support the intent of the Growth Management Act.

2.3.2 Minimum Design Standards

The standards addressed a diverse list of considerations by the utilities, including: material specifications, construction practices, distribution facilities, metered services, fire flow requirements, etc. The content and application of these standards were developed jointly through input of WUCC representatives and the county.

The standards are included in **Section 4**. They continue to be the minimum standards for all new water system improvement and have been adopted through ordinance on a final basis by the county and approved by DOH. A water utility may adopt these standards by reference, or may adopt more stringent standards.

The Kitsap County Health District (KCHD) also used these minimum design standards as a basis to develop revisions to standards applied to smaller systems. The small system standards apply to Group B systems, which are reviewed and approved by KCHD.

2.3.3 Utility Service Review Procedure (USRP)

The USRP was developed to identify the appropriate purveyor, both willing and capable to provide water service to new developments and expansions. This procedure utilizes the recognized service areas as a basis for assigning new applicants for development permits to water utilities. If the purveyor who is assigned the area in which a development is proposed is not able or is unwilling to provide timely and reasonable service, or if the area is a Satellite Management (undesignated) area, the closest adjacent utility with an approved water system plan becomes the preferred service provider. If adjacent and qualified utilities do not exist, the KCHD may refer a developer to an SMA. The recommended program for utility service review is outlined in **Section 5**.

2.3.4 Satellite System Management Agency (SMA) Program

A long-term program for providing satellite management services to new and existing water systems was developed. This program is described in **Section 6**. The program applies to undesignated service areas as well as within service areas where the designated utility cannot make a direct connection and is unwilling to accept "remote" ownership or operational responsibility. SMAs must be approved by DOH.

2.3.5 Regional Water Supply

The regional supply needs of Kitsap County were evaluated in increments through the year 2040. Forecasts of future population and water demand within the area were made based upon Puget Sound Council of Governments (PSCOG) population estimates and water use data from local utilities. An assumed level of water conservation was developed and factored into the water demand forecast.

An additional water demand of approximately 18 MGD (average day use) was forecast to be required for the study area by the year 2040. This analysis assumed that existing supplies were capable of meeting the current demand. Following review of potentially available surface and ground water sources, the preferred future supply option was determined to be continued reliance on ground water developed either at regional or local well fields. The GWMP identified the potential for substantial ground water in the western and southern areas of the county. A few new wells in the southern parts of the county had not identified significant new sources of ground water. Additional ground water exploration was suggested to determine the actual availability and suitability of ground water to meet future demands.

Surface supplies have an uncertain future for Kitsap County. The City of Bremerton obtains approximately 65% of its supply from the Union River. That supply is used for city customers along with contract supplies to Puget Sound Naval Shipyard, one small water district, and surplus to the City of Port Orchard.

2.3.6 Water Rights

A thorough review of the status of existing water rights was conducted for those expanding utilities within the CWSSA. Two sources of information were compared. One source was the water right records and the water right claims registry of Ecology. The other was in-service/installed capacity information obtained from utility questionnaire responses, utility comprehensive Water System Plans, and the Water Facility Inventory records of DOH. The result was a determination of: (1) where a utility's present use did not appear to be adequately covered by water rights; and, (2) those instances where a utility held water rights for future expansion.

These determinations were used in assessing the capabilities of existing utilities to meet current and future water needs and in evaluating the data requirements for filing a petition for water right reservation.

2.4 Individual Water System Plans

The Public Water System Coordination Act states that each purveyor within the external boundary of a CWSSA shall be responsible for preparing a Water System Plan for the purveyor's service area. This plan is to describe the utility's proposed method for serving its area. An exception to these criteria exists for non-municipally owned public water systems that existed prior to September 21, 1977, and which have met minimum State Board of Health requirements, but do not plan to extend water service beyond their existing area.

Prior to writing or revising a water system plan, purveyors should contact the Department of Health, Office of Drinking Water. The planning requirements are determined by DOH and vary for individual utilities based on size and complexity in accordance with **WAC 246-290-100**. The level of detail and specific requirements is determined during a pre-plan conference with DOH. A summary of the basic planning requirements is provided in **Appendix A**. A detailed description of planning requirements is provided in DOH's **Water System Planning Handbook (DOH Publication #331-068, April 1997)**. In addition to these requirements, future water system plans must address the items identified in the Municipal Water Law (MWL)[1]. Systems that do not require a Water System Plan are required to complete a Small Water System Management Program (SWSMP) in accordance with **WAC 246-290-105**. For a complete description of SWSMP content requirements, refer to the **Small Water System Management Program Guide (DOH Publication 331-134)**.

In addition to the above requirements, all systems within a CWSSA required to submit a water system plan must, in the preparation or update of their plan, address items relating to the entire CWSSA.

Items required include:

- Map of service area,
- Signed service area agreement,
- Population and water demand projections,
- Design standards,
- Implementation of minor and major regional projects,
- Implementation of water utility service review procedure,
- Implementation of a satellite system management program, and
- Water conservation program.

Exhibit 2-6 illustrates the procedure for the review and approval of individual water system plans by the KCHD and DOH. Currently, KCHD has responsibility for all public water systems with 25 or fewer service connections, as well as individual wells influenced by on-site wastewater regulations. The KCHD has defined that any system serving three or more residential connections is a public water system. However, a water supply that serves two lots in

[1] Revised DOH guidelines regarding elements of water system planning addressed in the MWL are to be in place by the end of 2005. Until that time, the "interim" approach developed by DOH will serve as a guide to these elements of drinking water planning.

which each lot is at least one acre or larger in size and the water source is a drilled well, is exempt from public water system requirements provided criteria specified in the **KCHD Board of Health Ordinance 1999-6** is met. The procedure outlined in **Exhibit 2-6** pertains only to public water systems. It is recommended as the review method for plans not yet submitted and for updates of all individual plans.

By reference, the individual water system plans are incorporated into this CWSP by **Appendix B, which** lists the current status of all Kitsap County Group A water systems' individual water system plans.

2.5 Regional Supplement

The 2004 CWSP has been prepared under the provisions of **WAC 246-293-220** which allows for a CWSP which consists of: (1) a compilation of water system plans approved by DOH, and (2) a supplement which addresses water purveyor concerns relating to the entire CWSSA. All completed water system plans of the individual utilities are incorporated herein by references, as **Appendix B**, and are kept on file at DOH and/or KCHD. The review and approval procedure for this document, the Regional Supplement, is outlined in **Section 10**.

KCHD is responsible for tracking the status of expanding water systems with respect to service area agreements and maintaining the official file of those agreements. KPUD, at the direction of KCHD, is responsible for updating computerized service area maps.

The original 1992 Regional Supplement is updated and amended by this 2004 document. Individual water utilities must update their plans as required by DOH. As water system plan revisions receive KCHD and /or DOH approval, they will be administratively included within the adopted CWSP.

Exhibit 2-1

1986 PRELIMINARY ASSESSMENT OF WATER RESOURCES AND
PUBLIC WATER SERVICE ISSUES IN KITSAP COUNTY
CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

The conclusions of this Preliminary Assessment are as follows:

A. Preventive action for the provision of reliable service and the protection of water supplies serving current customers is prudent and cost-effective.

B. The County's Comprehensive Plan projects a continued growth in population and water demand that will most effectively be met primarily by existing water utilities.

C. The County currently has more than 800 public water systems, with coordination of utility services only occurring between the major purveyors.

D. Preliminary estimates on growth, population, and water demand exceed the anticipated available groundwater resources.

E. The DOE has released draft regulations for the Instream Resources Protection Program which severely limit the possibility of developing an Olympic Peninsula surface supply for public water use within Kitsap County. It is necessary to coordinate the water supply development, protection, and transmission, particularly if a new surface water supply is required to meet future needs.

F. The existing County Water Plan was completed in 1970, and its findings may no longer be valid.

G. With the continued growth anticipated within Kitsap County, the responsibilities for protecting and managing the available groundwater resources consistent with County policies, must be established both for existing and future customers.

RECOMMENDATIONS

It is recommended that a CWSP and GWMP be implemented throughout Kitsap County, and that a petition for the reservation of future water rights be filed on those sources identified by the study effort.

It is further recommended that due to the unique geographical character of Kitsap County, subareas may be identified for more detailed analysis.

It is further recommended that the Kitsap County Commissioners take the necessary action to initiate the study effort and designate the Public Utility District as the lead agency for preparation of the CWSP and GWMP.

It is further recommended that a Steering Committee be established to coordinate the activities of the programs.

Exhibit 2-2

KITSAP COUNTY
RESOLUTION NO. 77-1987

WHEREAS, The Kitsap County Commissioners recognize and support the need to provide water supply and regional resource planning for the benefit of citizens throughout the County; and

WHEREAS, a Preliminary Assessment, dated April 15, 1986, has been prepared for Kitsap County which addresses concerns related to public water supply service and groundwater resource availability; and

WHEREAS, the Preliminary Assessment found that no significant problems exist at this time; and

WHEREAS, the Preliminary Assessment recommends a long range water resource planning program to help prevent problems from arising in the future; and

WHEREAS, the Preliminary Assessment recommended development of a Coordinated Water System Plan and a Ground Water Management Plan to update the County Water System Plan; and

WHEREAS, development of a Ground Waster Management Plan and a Coordinated water System Plan for Kitsap County will prepare a comprehensive resource strategy for preventative measures and not in response to existing water resource problems of a critical nature; and

WHEREAS, the Kitsap County Commissioners pursuant to Chapter 70.116.4 (1) RCW have the authority to invoke implementation of the Public Water System Coordination Act.

BE IT THEREFORE RESOLVED by the Board of County Commissioners of Kitsap County, Washington, that the provisions of Chapter 70.116 RCE be invoked and a Coordinated Water System Plan be prepared for the entire area of Kitsap County.

ADOPTED this 2nd day of March 1987.

BOARD OF COUNTY COMMISSIONERS
KITSAP COUNTY, WASHINGTON

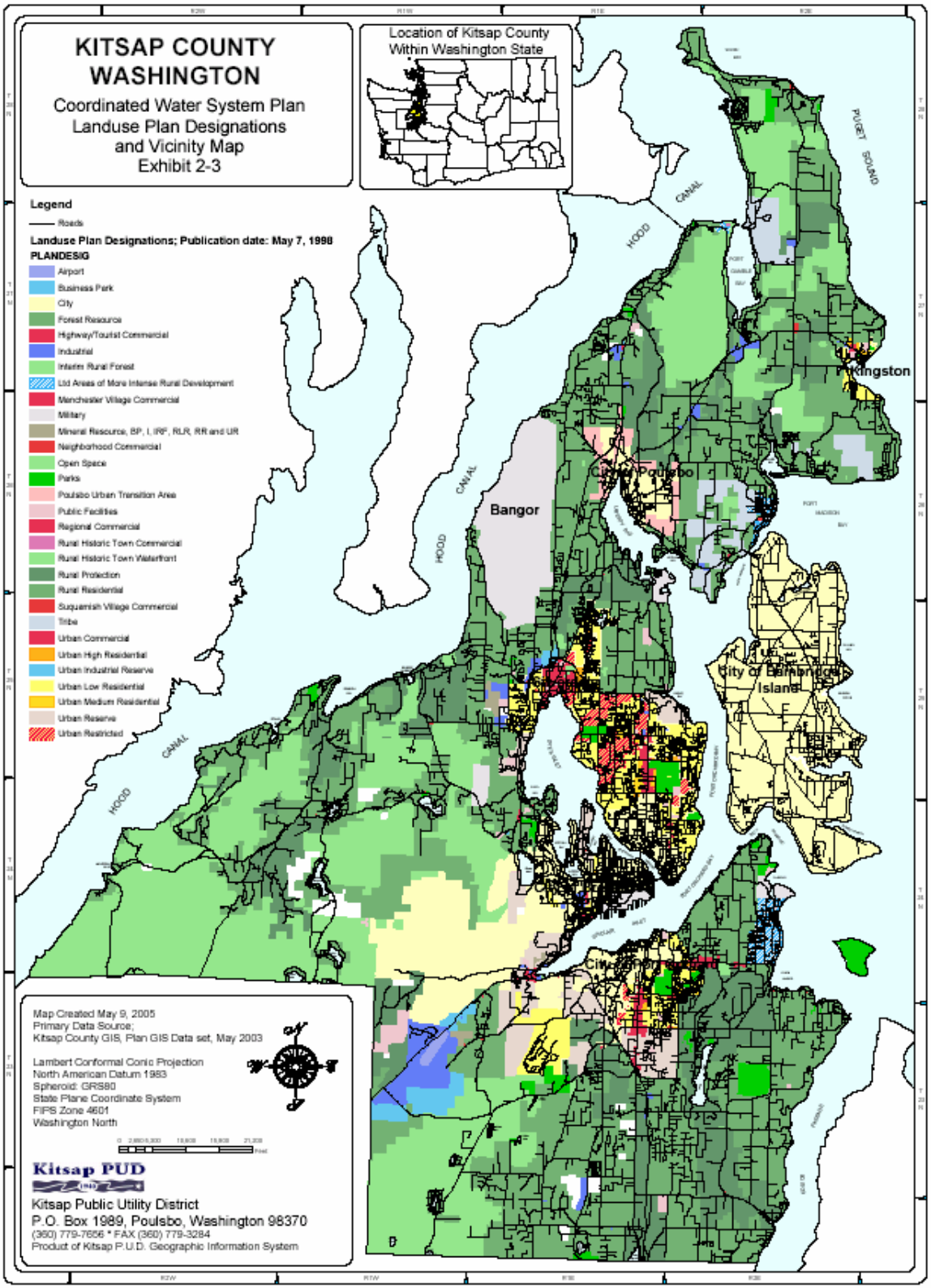
ATTEST:
Clerk of the Board

Chairman

Commissioner

Commissioner

Exhibit 2-3


KITSAP COUNTY
WASHINGTON
Coordinated Water System Plan
Landuse Plan Designations
and Vicinity Map
Exhibit 2-3
Location of Kitsap County
Within Washington State
Legend
Roads
Landuse Plan Designations; Publication date: May 7, 1998
PLANDESIG
Airport
Business Park
City
Forest Resource
Highway/Tourist Commercial
Industrial
Interim Rural Forest
Ltd Areas of More Intense Rural Development
Manchester Village Commercial
Military
Mineral Resource, BP, I, IRF, RLR, RR and UR
Neighborhood Commercial
Open Space
Parks
Poulsbo Urban Transition Area
Public Facilities
Regional Commercial
Rural Historic Town Commercial
Rural Historic Town Waterfront
Rural Protection
Rural Residential
Suquamish Village Commercial
Tribe
Urban Commercial
Urban High Residential
Urban Industrial Reserve
Urban Low Residential
Urban Medium Residential
Urban Reserve
Urban Restricted
Bangor
City of Poulsbo
City of Bainbridge Island
PUGET SOUND
HOOD CANAL
Map Created May 9, 2005
Primary Data Source;
Kitsap County GIS, Plan GIS Data set, May 2003
Lambert Conformal Conic Projection
North American Datum 1983
Spheroid: GRS80
State Plane Coordinate System
FIPS Zone 4601
Washington North
Kitsap PUD
Kitsap Public Utility District
P.O. Box 1989, Poulsbo, Washington 98370
(360) 779-7656 * FAX (360) 779-3284
Product of Kitsap P.U.D. Geographic Information System

May 15, 1990

KITSAP COUNTY
RESOLUTION NO. 228-1990

A RESOLUTION ADOPTING INTERIM PROCEDURES FOR COORDINATING WATER UTILITIES AND ESTABLISHING KITSAP COUNTY POLICIES FOR USE

WHEREAS, the Kitsap County Commissioners recognize and support the need to provide water supply and regional resource planning for the benefit of citizens throughout the County; and

WHEREAS, a Preliminary Assessment, dated April 15, 1986, has been prepared for Kitsap County which addresses concerns related to public water supply service and groundwater availability; and

WHEREAS, the Preliminary Assessment found that although no significant problems exist at this time, it recommended a long range water resource planning program to help prevent problems from arising in the future; and

WHEREAS, the Preliminary Assessment recommended development of a Coordinated Water System Plan and County Water System Plan March 1987; and

WHEREAS, the update to the development of a Coordinated Water System Plan for Kitsap County will prepare a comprehensive resource strategy for preventive measures and not in response to existing water resource problems of a critical nature; and

WHEREAS, the Kitsap County Commissioners pursuant to Chapter 70.116.4 (1) RCW have invoked the Public Water System Coordination Act March 1987; and

WHEREAS, the Kitsap County Public Utility District was given lead agency status to prepare a Water System Coordinated Plan with recommendations from the Water Utility Coordinating Committee; and

WHEREAS, interim procedures for the implementation of the Coordination Act have been forwarded to the Board of County Commissioners for their review; and

WHEREAS, the Board wishes to facilitate Coordinated Water Services within the County and establish policies for implementation; and

WHEREAS, compatibility of design provides efficiency of scale and opportunities for joint purchase and satellite services; and

WHEREAS, service areas established by management opportunity rather than management obligation provides timely services; and

WHEREAS, establishment of service areas and responsible management ensures the provision of quality and timely water services; and

WHEREAS, all County citizens should be ensured against inadequate water services, policies, and inequitable conditions; NOW

BE IT THEREFORE RESOLVED by the Board of County Commissioners of Kitsap County, Washington, that subject to the following purpose, goals and policies the “Interim Procedures", and "Appeals Process” attached as exhibit "A" be adopted.

Section 1. PURPOSE:

The purpose of the Coordinated Water System Program is to maximize the efficiency and effectiveness of water service delivery in the County by defining logical service areas within which utilities accept responsibility for providing service through direct connections, interim remote or satellite service which accomplish the following goals and policies:

Section 2. COORDINATED PLANNING

GOAL
CP 1: To develop mutually acceptable coordinated comprehensive land use plans which will minimize conflicts between jurisdictions concerning land use approvals and water system needs.

POLICY
CWS 1: Kitsap County and the cities within it will identify land use conflicts within adopted land use plans and develop through memorandum of understanding coordinated comprehensive plans including mutually agreed upon urban growth areas, annexation areas, and land use regulations and standards to eliminate these conflicts by July 1, 1991.

POLICY
CWS 2: In the interim until coordinated plans are adopted, Kitsap County and the cities within it may approve a land use which is in conflict with the adjacent plan only after the appropriate City or County has been provided notice and reasonable opportunity for comments.

POLICY
CWS 3: At a minimum, the coordinated planning area should include the appropriate water service area and should be a consideration in future urban growth boundary discussions.

Discussion:

Coordination of comprehensive plans, land use regulations**,** and standards allows for discussion between Individuals, the City and County, on an area by area basis such that conflicts between jurisdiction can be resolved which are tailored to the concerns of the area.

Section 3. SUPPLY

GOAL
WS 1: To provide for an adequate supply of potable water vital to the health and well being of the people of the County.

GOAL
WS 2: To develop and use efficiently the limited supply of readily available water in public water systems.

Discussion:

A two year analysis of the water availability contained in the Kitsap County Groundwater Management Plan Volumes I & 11 indicated among other things that water supply was not of immediate concern but that new testing and sampling requirements may place a burden on smaller less organized systems and that satellite service options would best alleviate such problems. Concerns about water availability continue and without coordination of new projects to existing utilities the proliferation of small systems without adequate expertise threatens the capability for providing safe and healthy water service.

Section 4. DISTRIBUTION:

GOAL
WD 1: To maximize efficient and effective development of the County's public water supply systems by providing a procedure to coordinate the planning of the public water supply systems.

GOAL
WD 2: To facilitate Coordinated Water Services within the County.

GOAL
WO 3: To ascertain cost-effective solutions to water system distribution and alternatives to proliferation.

POLICY
CWS 3: The Interim Procedures shall provide designated utilities the first opportunity to provide service to new water service applicants.

POLICY
CWS 4: The Interim Procedures may allow a project proponent that does not desire to annex to receive service from an adjacent utility only after appeal.

POLICY
CWS 5: A new utility within a utility's future service area may be formed only after successful appeal or where adjacent utilities have certified to the inability to provide service, including satellite agreements.

POLICY
CWS 6: Where a new utility is required due to either inability of the designated utility or adjacent utility or successful appeal, new service areas may be established

only by the Water Utility Coordinating Committee meeting the requirements of the adopted procedures and the applicable RCW and WAC.

Discussion:

The establishment of Service Area Boundaries was coordinated with all utilities serving more than ten customers. Boundaries were established and areas of conflict resolved through a negotiated process.

Section 5. STANDARDS:

GOAL
WS 1: To provide for the development of minimum planning and design standards for critical water supply service areas to insure that water systems developed in these areas are consistent with regional needs.

POLICY
CWS 7: New utilities or satellite systems within a designated utility's service area would be installed to meet the designated utility's minimum design standards.

Discussion:

The Water Utility Coordinating Committee met over a period of two years and discussed standards and design criteria and developed and reviewed proposed standards at work shops and public meetings held throughout the County. Pipe size was decided to be a higher priority than pipe type for example. The standards contained in the (attached) Ordinance are the result of this process.

Section 6. APPEALS:

GOAL
WA 1: To provide an appeals process to settle disputes and insure fair treatment of customers within utility service areas.

POLICY
CWS 8: Criteria for successful appeal may include but are not limited to matters which defeat the goals and purposes of the Coordination Act such as:

1) unreasonable cost for similar services requested; or
2) incompatible land use plan and system requirements; or
3) conditions of service excluding published rates and fees, but including annexation requirements outside of areas where there is a mutually agreed upon annexation plan; or
4) inefficient utility management or administrative procedure.

POLICY
CWS 9: Appeals to the Board of County Commissioner shall first consider the record presented in the appeals process and any new material authorized may require justification. The Board of County Commissioners may remand, change, delete or modify in whole or in part any previous decision.

Discussion:

The Water System Coordination Act is intended to provide for the efficient management and development of water systems and extensions. The provision of these services or extensions should be based on availability of service and not based upon other concerns of the purveyor.

ADOPTED THIS 4th day of June, 1990.

BOARD OF COUNTY COMMISSIONERS
KITSAP COUNTY, WASHINGTON

Chairman

Commissioner

Commissioner

ATTEST:

HOLLY ANDERSON
Clerk of Board

Exhibit 2-5

ORDINANCE NO. 134
AN ORDINANCE ADOPTING MINIMUM DESIGN STANDARDS FOR PUBLIC WATER SYSTEMS AND ESTABLISHING PROCEDURES FOR IMPLEMENTATION

WHEREAS, Kitsap County has been designated a Critical Water Supply Service Area (CWSSA) pursuant to Chapter 70.116 RCW the Public Water System Coordination Act of 1977; and

WHEREAS, pursuant to said Act, a Water Utility Coordinating Committee (WUCC) has been established to develop a Coordinated Water System Plan (CWSP) for the designated area; and

WHEREAS, the WUCC has prepared and adopted Minimum Design Standards to ensure that water systems developed in the designated area consistent with regional needs; and

WHEREAS, it is necessary to establish procedures for immediate implementation of these standards;

NOW, THEREFORE, BE IT ORDAINED BY THE KITSAP COUNTY BOARD OF COUNTY COMMISSIONERS:

Section 1 - Purpose. The purpose of the Minimum Design Standards is to set a base-level of utility planning, design, and construction for public water utilities. Uniformity and consistency in the Standards will enhance reliable service and hydraulic efficiency to consumers as system interties and/or consolidation of utilities takes place.

Section 2 - Definitions. The following words or terms are defined as follows:

A. Coordinated Water System Plan (CWSP) - A plan for public water systems within a Critical Water Supply Service Area (CWSSA) which identifies the present and future needs of the systems and sets forth means for meeting those needs in the most efficient manner possible.

B. Critical Water Supply Service Area (CWSSA) - A geographical area which is characterized by a proliferation of small inadequate water systems or by water supply problems which threaten the present or future water quality or reliability of service in such a manner that efficient and orderly development may best be achieved through coordinated planning by the water utilities in the area.

C Existing Water System - Any system or water supply intended or used for human consumption or other domestic uses including, but not limited to, source, treatment, storage, transmission and distribution facilities where water is furnished to any community, number of individuals, or is made available to

the public for human consumption or domestic use. This definition shall exclude water systems serving one single family residence, water systems existing prior to September 21, 1977, which are owner-operated and serve less than 10 single-family residences, and water systems serving no more than one industrial plant.

D. Service Area - A specific area within which direct service or retail service is planned by a public water system, as determined by written agreement between purveyors as provided in WAC 248-56-730.

E. Utility or Water Utility - Any agency or subdivision of the State or any Municipality, firm, company, mutual or cooperative association, institution, partnership, person, or any other entity that owns or operates a public water system for wholesale or retail service, or their authorized agent.

F. Water System Plan (WSP) - A written, comprehensive water supply plan prepared for a particular water system and service area which identifies a schedule of needed improvements, a financial program, and an operations program.

G. Water Utility Coordinating Committee (WUCC) - A committee required by WAC 248-56-500 which was established by the Kitsap County Board of County Commissioners and composed of a representative from each purveyor serving more than 50 customers, the County legislative authority, County planning agency, and health agencies.

Section 3- Application of Standards. The Minimum Design Standards are hereby adopted and incorporated into this Ordinance by reference. Subject to the exceptions noted below, each utility is to adopt design standards as part of their water system plan. It is intended that a utility shall adopt the Minimum Design Standards contained herein or higher standards, provided such standards are not inconsistent with applicable land use plans.

Existing water systems are not required to utilize these Minimum Standards for repair or replacement of facilities so long as no expansion of service are involved. However, if existing facilities must be repaired or replaced to serve an expanded area, new construction shall meet these minimum standards.

Section 4 - Procedure for Implementation New and expanding utilities shall meet water system planning requirements using land use designations for their service area, as prescribed in the Kitsap County Comprehensive Plan, appropriate subarea plans, Zoning Code, City Comprehensive Plans, and any related interlocal agreements. Such designation shall be identified in the utility's water system plan, and shall be used to establish design requirements.

The utility shall prepare a water system plan and a program of capital improvements required to provide the anticipated level of service within their designated water service area, consistent with the appropriate land use plan. When the utility is requested to provide water service, it will identify that portion of planned capital facilities as well as other installations which are necessary to provide the service requested. As growth occurs, the full level of water service will identify that portion of planned capital facilities as well as other installations which are necessary to provide the service requested. As growth occurs, the full level of water service will eventually be provided throughout the service area of the utility in a planned, phased program which meets County requirements. In this case, the utility and developer may reach an agreement to provide the desired service through a schedule of improvements which is specified by a legally binding contract.

A phased development plan shall be consistent with current Kitsap County Ordinances, the capabilities of the utility, and future capital requirements needed for the development at its maximum potential densities. A phased development plan shall depict the capital facilities for phased construction and their conformance with the standards.

Once a water utility's plan is approved, the utility should be consulted by the land use planning agency with jurisdiction regarding any proposed land use changes which impact the required level of water service. The water service-related cost of said impacts, as determined by the utility, should be fully considered by the planning agency in acting on the proposed land change.

Section 5 - Procedure for Variance. The appropriate utility, upon petition by an applicant for water service, may approve a variance of non-health related standards if deemed justified by public interests. Upon approval, the applicant will be referred by the utility to the appropriate local fire authority and other local and State jurisdictions for further approvals, as may be required.

Section 6 - Procedure for Standards Review. The Minimum Design Standards and their implementation shall be reviewed annually by the Water and Sewer Technical Advisory Committee of the Kitsap County Department of Community Development. The Committee shall seek input from the Kitsap County Fire Marshal and the fire districts in matters related to fire protection standards. Recommendations shall be submitted to the WUCC and, if provisions are approved, they shall be forwarded to the County Commissioners for adoption.

Section 7 - Effective Date. This ordinance shall be of full force and effect immediately upon passage.

PASSED this 4th day of June, 1990.

John Horsley, Chairman
Kitsap County Board of Commissioners

Billie Edel
Kitsap County Board of Commissioners

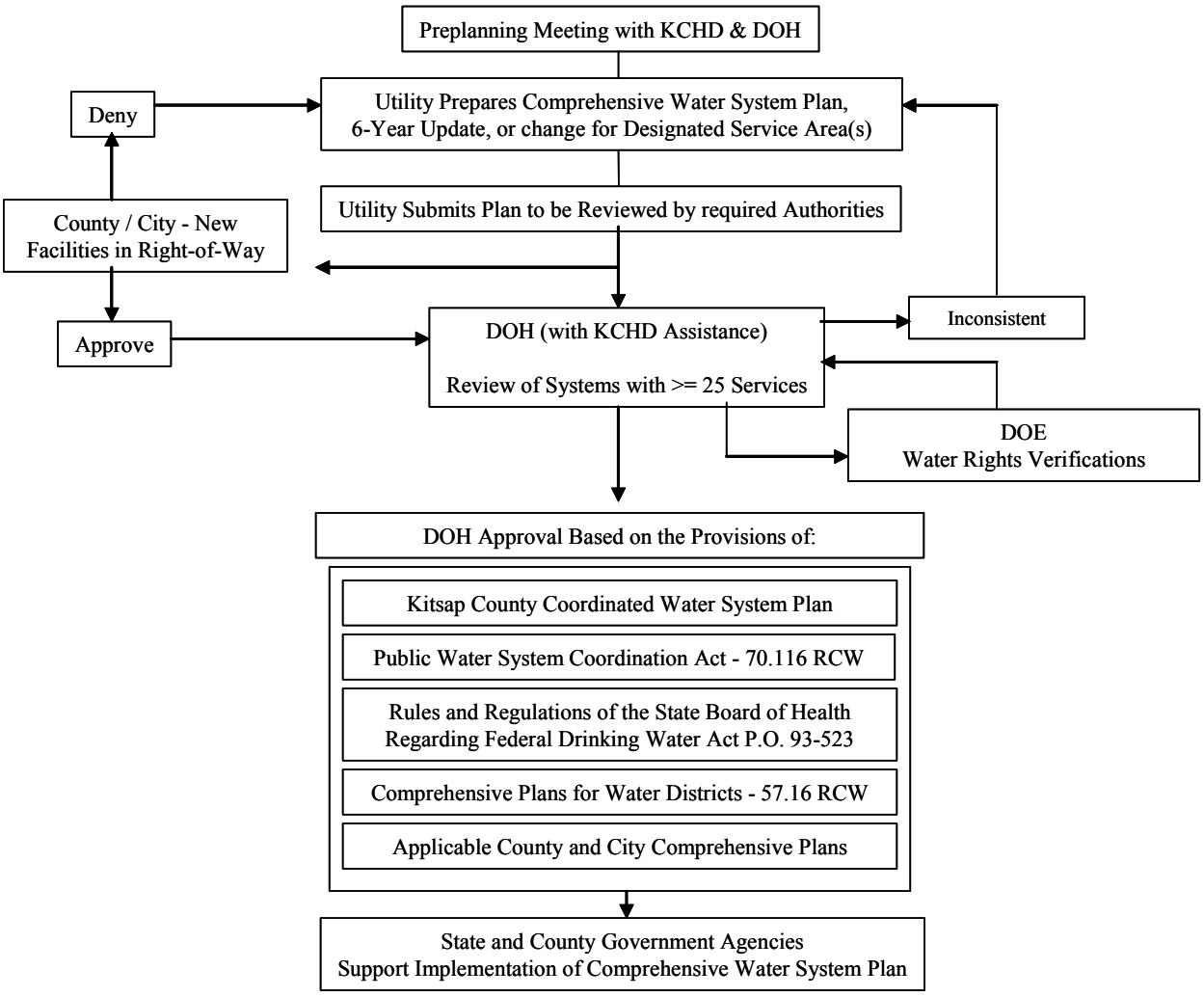
Win Granlund
Kitsap County Board of Commissioners

ATTEST:

Holly Anderson
Clerk of the Board

Exhibit 2-6

Water System Plan Review Process



Section 3 Water Utility Service Areas

3.1 Introduction

The Public Water System Coordination Act (Coordination Act) requires that a procedure be established to identify the existing and future service areas of public water utilities within a Critical Water Supply Service Area (CWSSA).

There have been no major changes in the Public Water System Coordination Act laws since the 1992 Coordinated Water System Plan (CWSP) was prepared, which influence the selection of future service areas by water utilities. However, changes have occurred in the allowable levels of service within retail service areas and how disputes are settled in the event of disagreements between utilities and applicants for service requests. These changes affect the Utility Service Review Procedure (USRP), which is described in Section 5. Provisions for designating wholesale water service areas have also been included. Much of the information presented below, therefore, is a reiteration of the intent and purpose of having well-defined service areas, the related responsibilities of service areas, and the process of their selection.

The establishment of retail service area boundaries carries with it two obligations. The first obligation is that the county and state governments recognize an identified utility as the responsible agency for providing all retail public water service within a designated area. The second obligation is that the designated utility shall assume responsibility, within its service area, for planning and implementing water system development and proper utility management. The manner in which this responsibility is to be fulfilled is described in the utility's water system plan.

Establishment of a Service Area Boundary carries two obligations for providing public water service: 1) Local governments recognize the utility as the responsible agency; 2) The utility shall assume responsibility within its area for planning, implementation, and utility management.

For those areas within the CWSSA which are in a utility's designated retail service area, but the utility is unwilling or unable to provide timely and reasonable service, or for areas which are not within any utility's designated retail service area, the Utility Service Review Procedure (USRP), gives priority to service by an existing Group A or B system which has mains within one quarter of a mile and has an approved water system plan, or a Satellite System Management Agency (SSMA). If these service options are not available, a new utility may be formed and constructed subject to Coordinated Water System Plan (CWSP) specifications and demonstration of financial viability.

The Coordination Act provides the legal mechanism, for municipal systems and private water utilities alike, to establish an exclusive retail service area. This procedure provides the utilities with the assurance that the financial commitments associated with their capital improvement programs are protected and that their planning is consistent with State and County requirements. From the County's perspective, designated retail service areas will mean a specific utility has

accepted responsibility for development of cost-effective and efficient service to accommodate the future growth that these areas will experience. Growth management objectives established for these areas by the County's Comprehensive Land Use Plans and Subarea Plans must be accounted for in each utility's approved plan and actual improvements.

The Coordination Act requires that retail service area boundaries be established by agreement among the purveyors based on a variety of factors. These factors include: topography, readiness and ability to serve, local franchise areas, legal water system or incorporated boundaries, future population projections, and sewer service areas. It also specifies that these retail service areas be developed in conformance with the land use policies of the County and other local governments including applicable ordinances, agreements, and guidelines.

The 1992 CWSP efforts enabled utilities to formally establish their retail service areas. Subsequently, conflicts have been resolved and adjustments have been made in previously identified boundaries. Some systems responding to growth have enlarged their boundaries. One important effort used Geographic Information System (GIS) technology to generate parcel-level accuracy for delineating retail service area boundaries.

3.2 Retail Service Area Commitments and Procedures

The designated retail service area defines the area within which current and future customers will be provided retail water service by the designated utility. An important distinction is that a utility's water facilities, such as sources of supply and reservoirs, can be located outside the utility's retail service area. These facilities can be located within another utility's retail service area, provided the facilities are not used for direct retail service to customers in that area without the written concurrence of the designated utility.

The designated retail service area is the exclusive service area of the identified utility and consists of current and future retail service areas. The current retail service area includes all parcels in the total, designated service area that can be served from existing mains by a service line connection. The future service area consists of the remaining parcels within the total, designated retail service area. As a condition of being granted a designated retail service area, the utility shall meet certain obligations and commitments, as described in the following:

3.2.1 Water System Plan and Retail Service Area Agreement

Each utility, including SSMAs, is required to prepare and submit to the Kitsap County Health District (KCHD) and/or the Department of Health (DOH) a water system plan. The plan must identify retail service area boundaries. Service area boundaries were established for Kitsap County water systems as part of the initial 1992 CWSP and have been updated periodically since then. With respect to the identification of future retail service areas, purveyors of all existing water systems in Kitsap County were asked to sign and submit service area agreements identifying existing and, if applicable, proposed future service areas. As part of the process, purveyors were asked to make a good faith effort to identify the proposed retail service areas (current and future) of adjacent water systems and to verify that no service area conflicts existed between the responding

purveyor and adjacent purveyors. The ultimate goal of this effort was to establish a qualified, exclusive right of retail water service within the service areas identified and approved. Agreements were developed between adjacent water systems, which included maps of both current and planned future retail service areas for each system. Water systems were given until one year after the initial CWSP was adopted to identify a future service area and declare the system to be an expanding system. The current and future areas of expanding systems were designated as the exclusive retail service area of the respective utilities. Service area claim overlaps between systems were identified and eventually resolved. Systems that did not respond were designated as non-expanding water systems. They were not required to sign an interlocal service area agreement, but were limited to providing service only to parcels adjacent to existing water mains or within the geographic section or plat the non-expanding water system was designed to serve.

3.2.2 Conditions of Service by Designated Utility

Water service can be provided by the designated utility either through direct connection to the utility's existing water system, or as a detached, remote system managed by the utility or others through agreement. In either case, the utility will identify for the applicant all of the conditions of service which must be agreed to prior to the provision of water service. The managing utility must be an approved SSMA if the system is to remain remote and detached. If remote and/or interim systems are not installed to the standards of the designated utility, the applicants will be advised of their responsibility to pay additional costs later if required to upgrade facilities to specified standards to integrate with the designated utility. The County or local jurisdictional authority is responsible to ensure that covenants explaining these potential future costs are recorded with all applicable parcels as a condition of all final plat, short plat, and land use approvals. Once the applicant agrees to these conditions, a building permit or preliminary plat approval can be issued.

The Coordination Act requires that the utility be willing to extend service in a timely and reasonable manner. The applicant is able to utilize an Appeals Process established by the CWSP if it is felt the designated utility is responding in an untimely or unreasonable manner. If service cannot be provided in a timely and reasonable manner, interim service area agreements or retail service area adjustments should be made.

3.2.3 “Timely and Reasonable Service”

An individual or developer seeking public water system service is required to receive service from the designated utility, but is entitled to appeal this requirement. The appeal will prevail if the requesting party can demonstrate that service is not being pursued in a “timely and reasonable” manner. “Timely service” is defined as receiving service within 120 days. If the extent of water service requested requires construction of major facilities such as the replacement or installation of new storage tanks, wells, booster pumps or transmission or distribution mains, the time associated with construction may be added to the 120 days. The 120-day time period shall be defined as calendar days. The time

period will commence after the submittal of an application and payment of fees. Construction of water facilities are subject to design review and approval both at the state and local levels, local permitting processes, construction season considerations, and are often done in conjunction with other planned infrastructure projects such as road, sewer, lights, etc. The previous activities are part of "construction time" and are in addition to the 120-day period.

A completed agreement on the provision of service that is satisfactory to both parties, must be reached within the 120-day period. A completed agreement will contain the schedule and terms of providing service within 120 days plus construction time (or a time period acceptable to both parties). The purveyor should document the record start date.

If an appeal exists, it will likely occur during the 120-day period. The appeal process as specified in the CWSP will be initiated, and will extend the 120-day period by a length of time equal to the time required to resolve the appeal.

An existing purveyor might be considered unable to provide the service in a timely manner if:

- Where no infrastructure is required (other than a water service connection), the water service is not provided to the applicant within 120 days of submitting a completed agreement and payment of necessary fees to the purveyor; or

- Where infrastructure installation by the purveyor is required (other than a water service connection), the water service is not provided to the applicant within 120 days (plus construction time) of final payment of applicable fees and infrastructure costs and completion of all required administrative work by the applicant; or

- Where infrastructure installation by the applicant is required, the purveyor has not provided the applicant access to its system within 120 days of the applicant submitting a written request and paying applicable fees to the purveyor unless the county or a local jurisdictional authority has specified otherwise; or

- The purveyor states in writing that it is unable or unwilling to provide the service; or

- The purveyor and applicant are unable to achieve an agreement on the schedule and terms of provision of service within 120 days of commencement of good faith negotiations by both parties because the purveyor has been determined to be unreasonable.

Water Rights - DOH requires all projects to be supported by adequate water rights. Purveyors may not assume that water rights will eventually be issued. Water rights may take years to obtain or may be denied. Therefore, waiting for a water right permit to be issued is neither timely nor reasonable.

Reasonableness criteria will consist of comparison with requirements, conditions, and character of service provided by other typical purveyors in the county or city, including consideration of the regulations of controlling government authorities.

Conditions of Service – Conditions of service shall be found to be reasonable, provided that they are consistent with the conditions of service policies detailed in the utility's DOH-approved water system plan.

An existing purveyor might be considered unable to provide service in a reasonable manner if:

- The purveyor's conditions of water service differ adversely and in an arbitrary and capricious manner from the stated conditions of service in the purveyor's approved water system plan or small water system management program; or

- The purveyor's conditions of water service differ adversely and in an arbitrary and capricious manner from the purveyor's acknowledged standard practice with other applicants requesting similar service.

Cost of Water Service – Cost of service specifically relates to system installation charges such as connection fees, capital facilities charges, front footage fees, and terms of developer extension agreements necessary to support requests for new water service in a utility's designated service area. System installation charges are typically addressed and justified in a utility's water system plan. Assuming consumer awareness and input, and adequate agency review of these elements prior to approval of the WSP, the reasonableness of cost of service should not be an issue for a given utility with an approved WSP. However, it is recognized that a utility's cost of service may be different for specific projects, which may require that cost become a topic of concern. Therefore, in some limited and unique circumstances, cost of service can be discussed as part of an appeal.

Service Area – A utility's service area(s) in its water system plan should be consistent with the service area(s) designated through the CWSP process.

A DOH approved water system plan- A water system that has committed to providing service for new requests for water must have an approved water system plan or have a development schedule to prepare a WSP, agreed upon by DOH.

Current operating permit status of water system – A system in a RED operating permit category cannot be expanded. A system in a BLUE operating permit category indicates that the system has yet to be evaluated for current adequacy status or its ability to expand. Systems with BLUE operating permits cannot be expanded until their adequacy for expansion has been determined. A system in a YELLOW operating permit category may or may not be considered capable of expansion, depending upon the nature of the problem(s) that caused the system to be placed in the YELLOW category. A system in the GREEN category has no restrictions on expansion up to their allowed number of connections, if a limit has been established by DOH.

Consistency with local land use plans and policies – Service area boundaries and utility level of service standards should be consistent with minimum design standards contained in the CWSP and be consisted with minimum level of service requirements in local jurisdictional plans and policies. Water system plans, designs, and policies should be consistent with local land use authority construction scheduling for capital improvements, financing schedules for capital improvements, and general purpose government comprehensive plans.

3.2.4 Interim Service Agreements

A utility may receive a request for service within its designated retail service area and may not be able to provide immediate service. If this occurs, interim operating services by an adjacent utility, an SSMA, or non-expanding system may be allowed providing the designated utility is in concurrence. Service may be provided either through physical connection to an adjacent utility's system or installation of a detached, remote system. The appropriate level of services shall be stipulated in a written agreement between the designated utility and the operating entity. Retail service area adjustments are not required for provision of interim services.

3.2.5 Retail Service Area Adjustment

If a utility determines that its retail service area is either too large or too small, the service area boundaries may be revised at any time. The retail service area boundary adjustment will require the agreement and signing of a revised service area agreement by all affected purveyors. Such revised agreements shall be executed by the authorized utility representative(s), approved by the County, and filed with the KCHD and KPUD for inclusion in the official CWSP file. The official maps will be updated by KPUD and provided to KCHD (see **Subsection 3.7** below). The individual water utility may submit a change to its water system plan or wait until the next revision is required by DOH.

3.3 Retail Service Area Selection Process

CWSSA Boundaries: No new public water systems created unless an existing system is unable/or unwilling to provide service.

The Coordination Act specifies that no new public water systems be created after the boundaries of the CWSSA are established unless an existing system is unable or unwilling to provide service. Existing water systems were involved in the initial development of the CWSP. The WUCC adopted the following definition of an existing public water system:

All municipal water systems; utilities with a DOH approved water system plan; properties served by existing distribution systems; and developments that have been given preliminary plat approval before June 4, 1990 with properties served by distribution systems for proposed or phased developments which have submitted written information for review or received approval

of their water system facilities, well site location, plans, and specifications from DOH and/or the local health district.

Expanding systems have been identified and have established their existing and anticipated future retail service areas. Areas outside the retail service areas claimed by existing utilities are designated **Satellite Management Areas**. KCHD will refer parties interested in water service in these areas to DOH designated Satellite Management agencies for Kitsap County. KCHD will also notify water purveyors with systems that are near to the proposed project so they can evaluate the possibility of extending service from their system.

June 4, 1990, is important because that is the date the County Commissioners adopted on an interim basis, the administrative procedures to establish retail service areas. The future retail service area boundaries were a key component of those interim procedures. In fact, efforts began in 1988 to contact utilities and obtain key information and retail service area boundaries.

For purposes of soliciting system information and retail service area boundaries for the CWSP, the KCHD initially contacted existing systems and visited several of the larger Group A systems (i.e., those previously designated as Class 1 systems) to obtain data. It was agreed that other systems which conform with the definition of an existing public water system would be added to the CWSP process at a later date if they demonstrated an interest in being included prior to the submission of the draft CWSP to the County and the DOH.

All larger Group A systems (i.e., those previously designated as Class 1 and 2 utilities) were contacted by letter. They were asked to verify their existing service area, as well as provide boundaries depicting their anticipated future service area. Smaller Group A and Group B systems (i.e., those previously designated as Class 3 and 4 systems), including those with pending applications, were also contacted by letter to identify expanding systems and the location of their future service area. Systems which only intended to add additional customers up to a pre-approved limit were not considered to be expanding. However, adding customers beyond an approved limit or enlarging the geographic area of service was considered expansion. Two hundred and fifty-eight smaller Group A and Group B purveyors responded, and only sixty-nine systems indicated their intent to expand. Utilities not responding were assumed to have no desire for expansion. Approximately fifty-two systems remain as expanding systems.

Retail service areas for expanding Group A systems were computerized using AutoCAD Version 10.0 onto a master set of reproducible maps. Subsequently, the retail service maps were refined to match parcel boundaries where possible. Current retail service areas of the larger water systems are shown on **Exhibit 3-1**. The computerized (digital) retail service area maps are maintained in an ARC/Info format that is compatible with the County digitized mapping program. KPUD is responsible for updating the master set of retail service area maps and providing official copies to KCHD.

In addition, a computerized map and Geographic Information System (GIS) database was developed from data provided by the County showing the location to the nearest quarter-quarter section of some of the larger existing non-expanding systems, including those systems with pending applications. A complete listing of these non-expanding systems and their questionnaire

responses is referenced in Section 8 and is on file at the KCHD. This listing includes data as reported by the utilities. In some instances the data may be conflicting in that a system was reported to be non-expanding yet additional connections were proposed.

The retail service area maps and associated computer data are incorporated into the CWSP by reference as **Appendix C**, and are on file with KPUD and KCHD. Data regarding these systems are also on file at both locations.

3.4 Retail Service Area Agreements

3.4.1 Form of Agreement

Retail service Area Agreements (Agreement) were drafted and submitted to utilities along with retail service area maps as the basis for the interim procedures and retail service areas adopted on June 4, 1990 by the County Commissioners. The percentage return of signed agreements was low.

A revised Agreement format was developed for utilities to acknowledge their role and responsibilities related to systems placed in receivership. This revised agreement format was reviewed by the WUCC and forwarded to the utilities for completion and signature to indicate acceptance of their future service areas. A copy of the current Agreement format is included as **Exhibit 3-2**.

As retail service area boundaries have been adjusted and as part of the effort to realign retail service area boundaries to parcel boundaries, new agreements and maps have been developed and signed by the applicable water utilities. Signed Agreements are included by reference as **Appendix C**.

Establishment of bilateral agreements between all adjacent water systems in the county would have been extremely cumbersome. Therefore, the individual Service Area Agreement was chosen to allow each utility to obtain agreement on the boundary of its retail service area (both current and future) with all adjacent water systems, through one document. The utility also acknowledges adjacent utility boundaries by signing the agreement(s) for each adjacent utility's service area.

To confirm designated retail service areas and establish their legal service boundary, all expanding water utilities were required to complete the Agreement and submit it to the KCHD. Each Agreement was reviewed in conjunction with individual water system plans.

Failure to file an Agreement within one year from the date of submittal of the original CWSP by the WUCC to the Kitsap County Commissioners precluded a utility from system expansions. For utilities with unresolved retail service area conflicts, expanding retail service within the contested service area is not permitted.

Where understandings concerning common retail service areas, joint service, transfer of service, or common boundaries require more specific terms than are provided in the standard Agreement format, the affected utilities may document the specific conditions in an attachment to their agreements. In order for these understandings to be recognized in implementing the CWSP, the utilities must place them on file with the KCHD as an attachment to the Agreements.

3.4.2 Small Systems

Many systems are recognized through this CWSP as being entitled to enlarge their systems to serve only the number of originally approved connections. In some cases, these small systems are within the current or future retail service areas of larger utilities. Expansion of the smaller systems up to the original number of approved connections is a valid element of this CWSP. Expansion beyond the limit requires approval of the KCHD as well as the encompassing designated utility. DOH approval may be required for a system serving over 25 connections or for Group A systems, which are non-transient / non-community.

Existing systems that had planned for retail service area expansion but did not document their intention through the CWSP preparation process are not precluded from seeking such recognition in the future. This could be accomplished through participation in the CWSP update process or, in the interim, through an appropriate documented request to the KCHD. Any such request should verify that the utility's expansion plans are consistent with the objectives and requirements of the CWSP and are not conflicting with those of other utilities that did participate during preparation of the CWSP. Expansion will require the concurrence of adjacent water utilities. Non-participating systems may be given a lower referral priority to proposed development within 1/4 mile of their service mains.

3.4.3 Retail Service Area Recognition

Recognition of utility retail service areas and agreements by the County shall be incorporated into the County franchise review process. If County standards are met, the existing franchise boundaries can be revised to coincide with the designated water service area boundaries of the CWSP. Also, KCHD will notify the Boundary Review Board of those utilities who have signed Retail Service Area Agreements, of the retail service area boundary of each such utility, and request these boundaries be recognized in the conduct of Boundary Review Board responsibilities.

Franchise Review: County franchise process will recognize utility service areas and agreements.

3.5 Unresolved Retail Service Areas

Although several retail service area conflicts were originally identified during preparation of the CWSP, most conflicts have been resolved. Some of the conflicts were changed to uncontested overlaps, while others were resolved through a redefinition of future service area boundaries.

Current areas of conflict/overlap are shown in **Exhibit 3-1**. Unless needed for public health reasons, proposed expansion activities or planned capital improvement will be prohibited within conflict areas until the disputes are resolved.

3.6 Wholesale Service Areas

Some water purveyors provide or may in the future provide wholesale water to other water systems. Such purveyors will designate the area in which they provide or are willing to provide wholesale water service. To maximize flexibility, wholesale water service areas may overlap, as a water system may want to have multiple outside wholesale water supplies**. Exhibit 3-3** provides maps for each current wholesales service area. Wholesale water sales will be conducted based on individual agreements or contracts between the parties involved. New wholesale service areas may be created by submission of the proposal, including a wholesale service area map, to KCHD for review and the County for approval.

3.7 Service Area Boundary Change Procedure

A change in utility service area boundaries will occur when a utility wishes to expand or reduce its service area. For retail service areas, changes will be approved only if a new conflict in service areas is not created by the modification.

A revised Service Area Agreement will be required of utilities requesting boundary changes for retail service areas. A utility that desires to change its wholesale service area will submit the changed service area agreement and map(s) to KCHD for review and approval. The KCHD will review all requested adjustments in service area boundaries to ensure that utility service is consistent with the CWSP objectives. Proposed retail service area boundary changes that are not agreed on by all parties will be referred to the WUCC Appeals Committee. All service area changes will be forwarded by KCHD to the County for review to ensure the proposed areas are not inconsistent with applicable comprehensive plans, or development regulations adopted under chapter 36.70A RCW; any other applicable comprehensive plan, land use plan, or development regulation adopted by the county or a city or town; or any watershed plan approved under chapter 90.82 RCW, or a comprehensive watershed plan adopted under RCW 90.54.040 (1), if such a watershed plan has been approved for the area involved. After approved by the county KCHD will direct KPUD to incorporate all approved service area boundary changes into the official service area maps. KCHD will forward retail service area maps and agreements, signed by affected utilities and revised wholesale service area maps to DOH and other appropriate state and county agencies. Boundary changes will serve as a reference for the Utility Service Review Procedure described in **Section 5**.

Exhibit 3-1

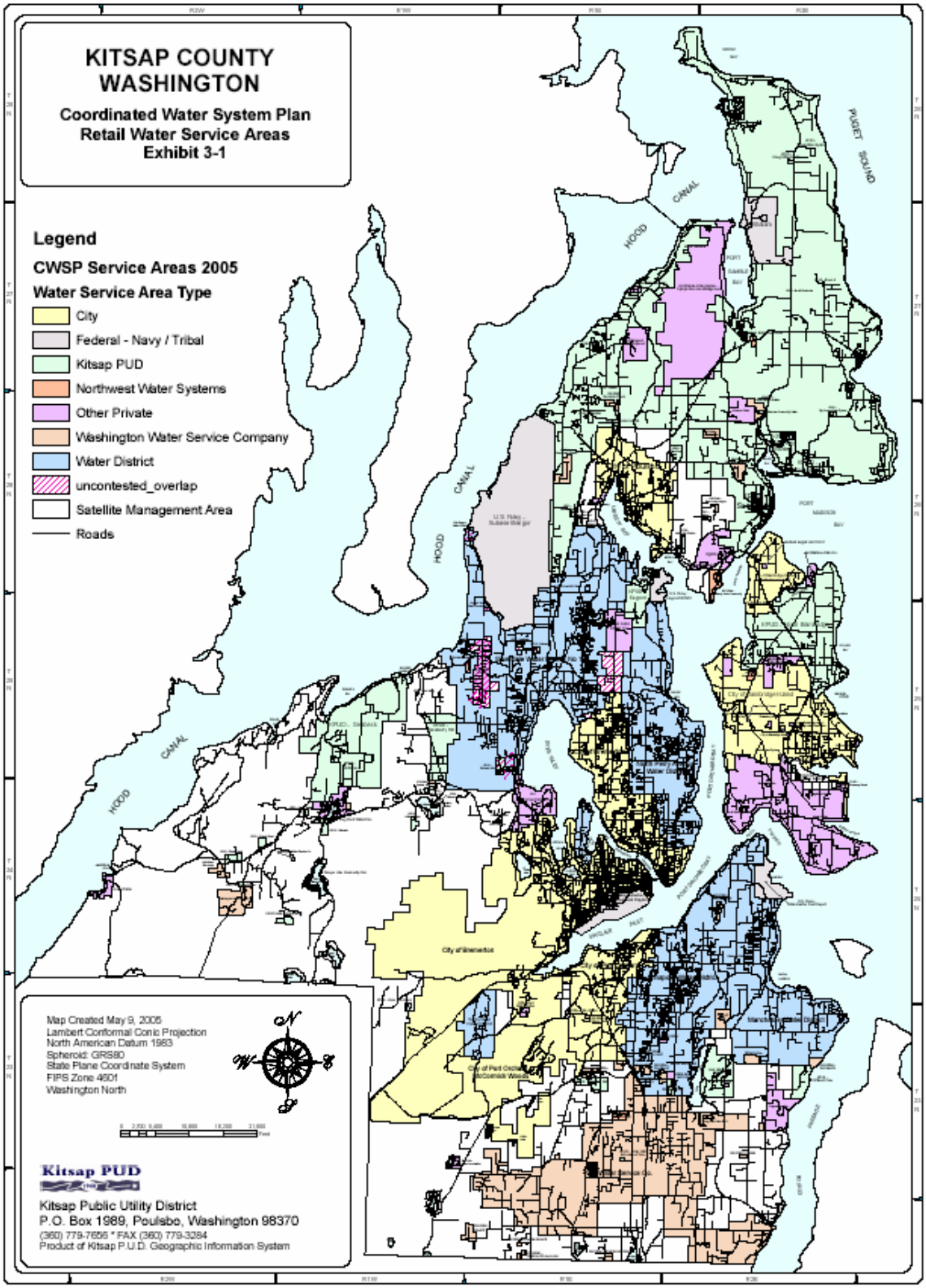

KITSAP COUNTY
WASHINGTON
Coordinated Water System Plan
Retail Water Service Areas
Exhibit 3-1
Legend
CWSP Service Areas 2005
Water Service Area Type
City
Federal - Navy / Tribal
Kitsap PUD
Northwest Water Systems
Other Private
Washington Water Service Company
Water District
uncontested_overlap
Satellite Management Area
Roads
HOOD CANAL
PUGET SOUND
Map Created May 9, 2005
Lambert Conformal Conic Projection
North American Datum 1983
Spheroid: GRS80
State Plane Coordinate System
FIPS Zone 4501
Washington North
Kitsap PUD
Kitsap Public Utility District
P.O. Box 1989, Poulsbo, Washington 98370
(360) 779-7656 * FAX (360) 779-3284
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Exhibit 3-2

INTERLOCAL AGREEMENT

FOR ESTABLISHING WATER UTILITY RETAIL SERVICE AREA BOUNDARIES

IN ACCORDANCE WITH THE KITSAP COUNTY

COORDINATED WATER SYSTEM PLAN

PREAMBLE

This Interlocal Agreement assigns a water utility retail service area, including a planning area for future retail service that identifies the external boundary of the area for which the designated water purveyor has assumed retail water service responsibility. The responsibilities accepted by the water purveyor are outlined in the Kitsap County Coordinated Water System Plan (CWSP) and are contained in the adopted rules and regulations of the State Department of Health (DOH). This agreement does not create a new government entity nor does it give new authorities or responsibilities to the water purveyor or to the County or State regulatory agencies, but rather acknowledges the geographical area for designated service responsibilities. This agreement is in effect so long as the water utility remains as a public water system purveyor and continues to carry out the obligations inherent in the agreement or until an agreement amendment is executed.

The terms used within this Agreement shall be as defined in the implementing regulations of **Chapter 70.116 RCW**, except as identified below.

1. Kitsap County Water Utility Retail Service Area Map shall mean the map referenced in the Interlocal Agreement as Attachment A that defines the retail water utility service area for the designated water system.

2. Retail Water Utility Service Area shall mean the designated geographical area in which a purveyor is responsible for planning and providing water service to its customers. The service area is composed of both a current and future service area as described in the CWSP. A wholesale water supplier shall not provide water to individual customers in another purveyor's retail service area except with the written concurrence of the purveyor responsible for the geographical area in question. The retail service area may be amended in accordance with the CWSP procedures and with the concurrence of the affected water purveyors.

3. Lead Agency for administering the Kitsap County water utility service area agreements and retail service area maps shall be the Kitsap County Health District (KCHD) unless otherwise established by amendment to the CWSP.

The authority for this Agreement is granted by the Public Water System Coordination Act of 1977, **Chapter 70.116 RCW**, having been properly initiated through the provisions of **RCW 70.116.040.**

WHEREAS, Such an Agreement is required in **WAC 248-56-730**, Service Area Agreements-Requirements, of the Public Water System Coordination Act; and

WHEREAS, Designation of retail water utility service areas, together with the cooperation of adjacent water utilities, will help assure that time, effort, and money are best used by avoiding unnecessary duplication of service; and

WHEREAS, Definite future water utility retail service areas will facilitate efficient planning for, and provision of, water system improvements within Kitsap County as growth occurs; and

WHEREAS, Definite retail utility service areas will help assure that water reserved for public water supply purposes within Kitsap County will be utilized in the future in an efficiently planned manner; and

WHEREAS, no separate legal or administrative entity will be created by this Agreement;

NOW, THEREFORE, the undersigned parties, having entered into this Agreement by their signature, concur with and will abide by the following provisions:

Section 1. **Water Utility Retail Service Area Boundaries** The undersigned acknowledge that the Kitsap County Water Utility Retail Service Area Map(s) included as Attachment A to this Agreement, identify the current and future area of retail water utility service and planning responsibilities for the designated utility. The undersigned further acknowledge that there are no retail service area conflicts with adjacent water utilities, or, where such conflict exists, agrees that no new water service will be extended within disputed areas until such conflicts are resolved. Retail service area conflicts are noted on **Attachment A**.

Section 2. **Common Water Utility Retail Service Areas** It is understood that utilities may agree to special service arrangements inside certain areas. Such common retail service areas, if they exist, are described in **Attachment B** to this agreement. Also included in **Attachment B** are copies of, or a list of, all associated resolutions, ordinances, or agreements.

Section 3. **Water Utility Retail Service Area Boundaries** will normally be along parcel boundaries. Exceptions are noted in **Attachment A**.

Section 4. **Boundary Streets** Unless separate agreements exist with adjacent water utilities, the party agrees that the utility, which is located to the north and/or east of boundary line streets between adjacent water utilities, will be entitled to provide future retail water utility service on both sides of those streets. Depth of service on boundary streets shall be limited to one platted lot or as otherwise agreed by the utilities. Existing services on boundary streets shall remain as connected unless both parties, as per **Section 2**, agree to transfer of service. These provisions do not disallow the placement of mains in the same street by adjacent utilities where geographic, economic, or other constraints make such placement desirable.

Section 5. **Boundary Adjustments** If, at some time in the future, it is in the best interest of adjacent water utilities to make retail service area boundary adjustments, such modifications must be by modified water utility service area agreements executed by the involved utilities. The modified agreements must be signed and filed with KCHD and DOH. A copy will be forwarded to Kitsap Public

Utility District for inclusion in the countywide retail service area map. It is understood by the designated utility that it may decline to provide service within its water utility retail service area boundary, but in that case, an applicant may be referred to other adjacent utilities, or to a state certified Satellite Management Agency (SMA), or a new utility may be created. The original water utility retail service area boundary will be adjusted accordingly.

Section 6. **Service Extension Policies** The undersigned utility agrees that in order to expand its current water utility retail service area, other than by addition of retail customers to existing water mains, or to serve in the capacity of a state certified SMA, it shall have adopted design standards and utility service extension policies. The design standards shall meet or exceed the Kitsap County Coordinated Water System Plan Minimum Standards and Specifications.

Section 7. **Systems Placed in Receivership** State law provides that whenever an action is brought in superior court to place a public water system in receivership, the petition to the court shall name candidates for receiver who have consented to assume operation of the water system. The undersigned water utility agrees to be named as receiver in such action initiated for systems surrounded by its water utility retail service area. By this consent, the undersigned does not waive its rights to appear and participate in the court proceedings to determine acceptable conditions of receivership.

This agreement by reference includes the following attachments:

Attachment A: Kitsap County Water Utility Retail Service Area Map. (See **Section 1**)

Attachment B: Common Service Area Agreement - Optional - Utility may attach copies or list such agreements if relevant. (See CWSP **Section 2**)

IN WITNESS WHEREOF, the undersigned parties acknowledge having the authority to, and have executed this Agreement as of _____.

_____	_____
Water Utility	Adjacent Water Utility
_____	_____
Representative	Representative
_____	_____
Title	Title

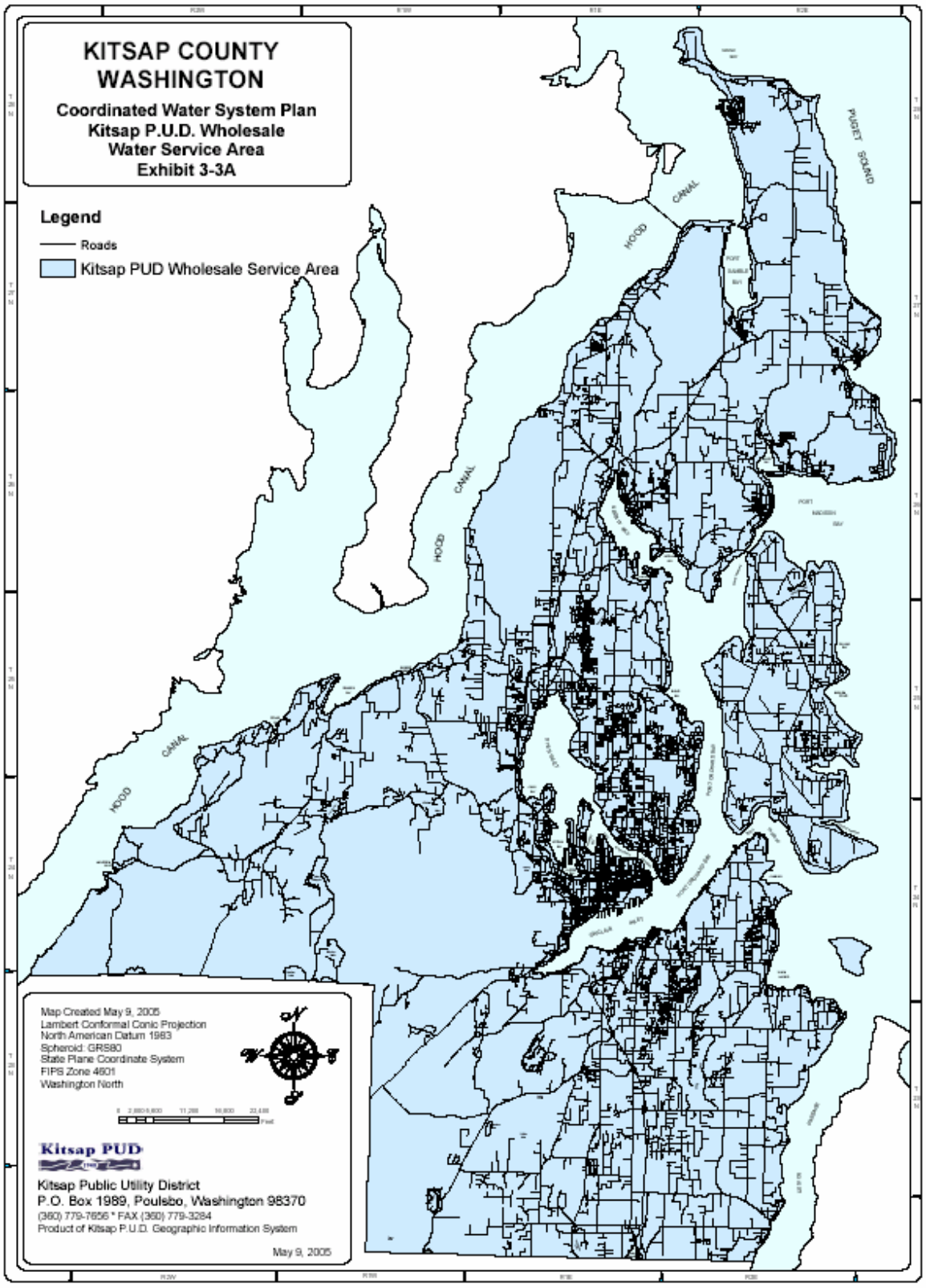
(add places for signatures as necessary to accommodate all adjacent purveyors)

Receipt Acknowledged and adjacent purveyor concurrence certified:

_____
(KCHD)

_____
Date

Exhibit 3-3A


KITSAP COUNTY
WASHINGTON
Coordinated Water System Plan
Kitsap P.U.D. Wholesale
Water Service Area
Exhibit 3-3A
Legend
Roads
Kitsap PUD Wholesale Service Area
HOOD CANAL
PUGET SOUND
Map Created May 9, 2005
Lambert Conformal Conic Projection
North American Datum 1983
Spheroid: GRS80
State Plane Coordinate System
FIPS Zone 4601
Washington North
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Kitsap Public Utility District
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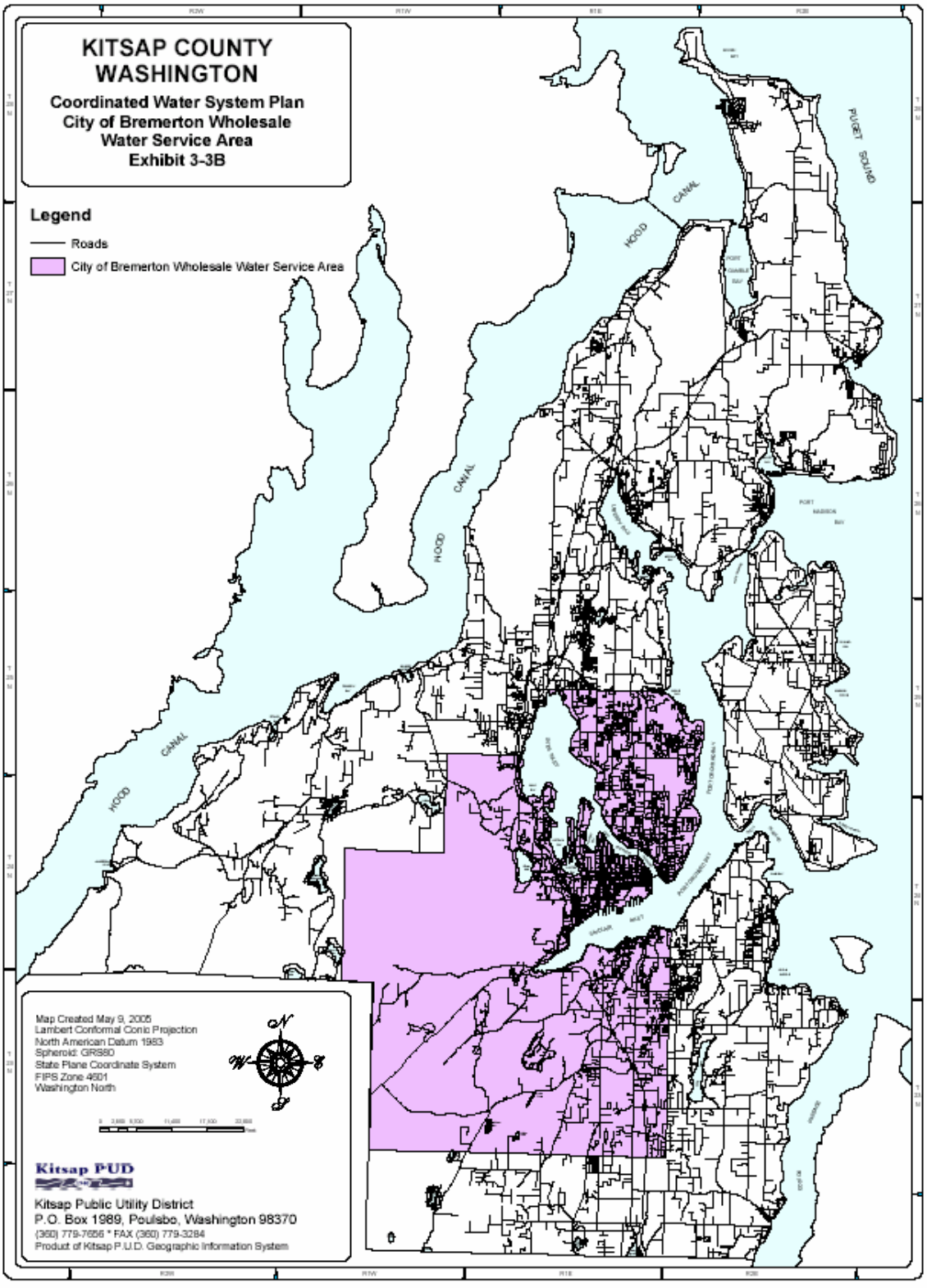
May 9, 2005

Exhibit 3-3B


KITSAP COUNTY
WASHINGTON
Coordinated Water System Plan
City of Bremerton Wholesale
Water Service Area
Exhibit 3-3B
Legend
Roads
City of Bremerton Wholesale Water Service Area
PUGET SOUND
HOOD CANAL
HOOD CANAL
HOOD CANAL
Map Created May 9, 2005
Lambert Conformal Conic Projection
North American Datum 1983
Spheroid: GRS80
State Plane Coordinate System
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Section

4 Minimum Design Standards

4.1 Introduction

This section of the Coordinated Water System Plan (CWSP) provides a set of minimum design and performance specifications for new water utilities and for all existing utilities planning to install capital facilities for expansion in Kitsap County.

The Public Water Systems Coordination Act and the procedures outlined herein shall apply uniformly to all public water supply systems in Kitsap County. These standards do not supersede any other legally constituted and applicable standards that are more stringent. Group B water system standards are addressed in **subsection 4.9**.

The Design Standards do not supersede any other legally constituted and applicable standards that are more stringent.

4.2 Purpose

The purpose of these standards is to set a minimum level of utility planning, design, and construction for all new and expanding public water utilities throughout Kitsap County. Uniformity and consistency in standards will, in the long-term, increase system efficiency and reliability and reduce overall costs to consumers as system consolidation takes place. Reliability of water supply will also be improved.

Group A public water systems adopt minimum design standards as a part of their Water System Plan. The design standards included herein are intended as a minimum baseline supplement to those approved within individual Water System Plans. It is understood that some water systems may adopt higher standards based on individual needs. All standards must be consistent with the Kitsap County Comprehensive Plan (COMPLAN), supporting documents, as well as other local planning ordinances, agreements, and guidelines.

4.3 Application of Standards

4.3.1 Existing Water Systems

Existing water systems are not required to use these minimum standards for repair or replacement of facilities so long as no expansion of main distribution is involved. However, adherence to these standards for repair and replacement is encouraged to provide better public water service throughout the county. If existing facilities must be repaired or replaced to serve an expanded distribution area, the new construction shall meet these minimum standards.

4.3.2 Water System Plans and Applicable Land Use Plans

New and expanding utilities shall meet water system planning requirements based on land use designations for their service area as prescribed in the COMPLAN, appropriate Sub-Area Plans, Zoning Code, City Comprehensive Plans, and any related Interlocal agreements. Land use designations shall be referenced in the utility's Water System Plan, and shall be used to establish design requirements.

Urban Growth Area (UGA) Managements Agreements are being developed to facilitate and encourage annexation and/or incorporation of urban areas over 20 year planning periods, to ensure compatibility of development within the unincorporated Urban Growth Area, and to encourage the location of urban density residential, commercial and industrial developments in areas where services can be most economically provided. The agreements will identify services to be provided in the Urban Growth Area, the responsible service purveyors, and the terms under which the services shall be provided. All service providers, including special districts should be included in Urban Growth Area planning.

As required by the state, water utilities shall prepare a water system plan which includes a program of capital improvements required to provide the anticipated level of service within their designated water service area, and which is consistent with the COMPLAN, UGA Management Agreement, and/or City Comprehensive Plan. When the water utility is requested to provide water service, it will identify that portion of planned capital facilities, as well as other infrastructure needs which are necessary to provide the service requested. As growth occurs, the full level of water service will eventually be provided throughout the service area of the utility in a planned, phased program, which meets county requirements and minimizes overall cost to the customers.

In some cases, the utility and a developer may reach an agreement to provide the desired level of service through a schedule of improvements, which is specified by a legally binding contract.

A phased development plan shall be consistent with current, applicable Kitsap County Ordinances and Codes and future capital requirements needed for projected densities. A phased development plan shall depict the capital facilities for phased construction and their conformance with these standards.

In areas defined as Urban, Commercial, Business Park, Airport, and Industrial by the county, the utility shall install a distribution system with a minimum pipe size of 6 inches. The installation schedule for fire hydrants and storage will be based on the designated water utility's Water System Plan and the fire flow requirements established by the appropriate authority.

For areas defined as Rural, the minimum pipe size may be less than 6 inches, unless the appropriate authority requires fire

Planning agencies should notify a utility regarding any land use or fire flow changes that will impact the required level of water service.

protection. The installation of hydrants and storage will be based on the requirements of the appropriate authority.

Once a water utility's plan is approved, the utility should be consulted by the land use planning agency with jurisdiction regarding any proposed land use changes or fire flow requirement modifications which impact the required level of water service. The water service related cost of said impacts, as determined by the utility, should be fully considered by the planning agency in acting on the proposed land use change.

4.3.3 Variance

The appropriate utility, upon petition by an applicant for water service, may approve a variance of non-health related standards included herein if deemed justified after considering appropriate aspects of public interest. Upon approval, the applicant will be referred by the utility to the appropriate local authority, and other local and state jurisdictions for further approval, as may be required.

4.4 Standards Incorporated by Reference

The standards listed below, or as they may be modified in the future by the appropriate authorities, are hereby incorporated by reference. Priority for application of these standards, in general, is in the order listed, but the most stringent applies. Except as otherwise superseded by the county standards described in **subsection 4.5**, these standards will apply to water system design, installation, modification, and operation.

- Rules and Regulations of the State Board of Health Regarding Group A and Group B Public Water Systems **(WAC 246-290, WAC 246-291 and WAC 246-293)**.
- Minimum Standards for Construction and Maintenance of Water Wells (**WAC 173-160**).
- Water System Design Manual, Washington State Department of Health, August 2001, or latest version.
- Applicable county and city rules, regulations, ordinances, and standards.
- Standard Specifications for Road, Bridge, and Municipal Construction, as published by the Washington State Department of Transportation/ in conjunction with the Washington Chapter of the American Public Works Association (DOT/APWA, latest edition).
- Standards of the American Water Works Association.

4.5 General Provisions

4.5.1 Source Development

New sources must be designed to meet the Department of Ecology (Ecology) and Department of Health (DOH) regulations and design guidelines including **Chapter 173-160 WAC**, "Minimum Standards for Construction and Maintenance of Water Wells"

administered by Ecology, and **Chapters 246-290 WAC and 246-291 WAC** "Rules and Regulations of the State Board of Health Regarding Group A and Group B Public Water System," as administered by DOH.

All test and production wells must be drilled in accordance with detailed drilling and testing specifications, which have been prepared or approved by the utility, or in accordance with the **DOH Water System Design Manual**.

4.5.2 Water Rights

Water rights must be obtained in accordance with state law, regulations, and procedures **(Chapter 90 RCW)**. Copies of water rights documents, related correspondence, and other associated records will be maintained on file by the purveyor.

4.5.3 Water Quality

Water quality must be proven to conform to the **Federal Safe Drinking Water Act** (as amended), DOH criteria specified in **Chapters 246-290 WAC and 246-291 WAC**, and/or any additional requirements more stringently applied by the local health district. Each utility may reserve the right to reject any source whose raw water quality does not meet these criteria.

4.5.4 General Construction Standards

Selection of materials and construction of water system facilities in Kitsap County shall conform to the provisions of **subsection 4.4**, with the additional provisions:

- All owners/operators of water systems having water mains in county road rights-of-way must comply with franchise requirements outlined in ordinances passed by the County Board of Commissioners authorizing such use of the road and rights-of-way. Construction within incorporated boundaries remains subject to city permitting requirements. If requirements of the franchise are more stringent than the adopted minimum standards, the franchise shall have precedence.

- Water mains constructed to lie on private property shall have easements from the property owner(s) of a minimum of 15-foot width, centered on the pipeline alignment, recorded with the County Auditor prior to placing the line in service.

- All projects requiring design by a registered professional engineer shall be inspected by the utility or its designated representative before closure of any excavation. The county may inspect facilities under construction at any time.

4.5.5 Hydrostatic Pressure Test

A hydrostatic pressure leakage test will be conducted on all newly constructed water mains, fire lines, fire hydrant leads, and stub-outs in accordance with **DOT/APWA**

Section 7-11.3(11) or **AWWA C-600** specifications, unless specified otherwise by the designated utility.

4.5.6 Disinfection and Bacteriological Testing

All pipe, reservoirs, and appurtenances shall be flushed and disinfected in accordance with the standards of DOH, **AWWA C651-86** and **C652-86**, or **DOT/APWA Section 7-11.3(12)**, unless specified otherwise by the designated utility.

4.5.7 Utility Interties

Interties should be established where desired, observing the requirements of **RCW 90.03.383**. "No intertie shall be used and/or constructed as a public water supply without department approval" per **WAC 246-290-132**. Planning for major water line extensions should consider specific locations, size, and alignment of potential future emergency interties with adjacent water utilities.

4.5.8 Flow Measurement

Unless otherwise directed by the designated utility, all service lines shall be installed so that each residential, commercial, institutional, and industrial structure will have a separate metered service for domestic water received from the utility. If approved by the designated utility, domestic water consumption may be measured by a master meter for service to a complex, under single ownership, and where water utility line subdivision is impractical. Service lines providing fire flow may be required by the utility to be equipped with a fire flow meter, leak detection check valve and/or appropriate cross-connection control devices as required by **WAC 246-290-490**.

All new ground water sources shall be provided with an access port for devices that measure depth to water and be outfitted with a flow-measuring device for total production. Installation of a production meter is also recommended for existing ground water sources and may be required by Ecology. DOH expects all Group A water systems to install a flow measurement device on all their sources and routinely record water production. All new sources for which water treatment is included shall be provided with a flow measurement device.

> Group A water systems should install a flow measurement device and record water production.

4.5.9 Cross-Connection Control

Where the potential of contamination of the supply exists, water services shall be equipped with appropriate cross-connection control devices in accordance with **Chapters 246-290 WAC and 246-291 WAC**. The designated utility and/or the county cross-connection control program shall determine the need, size, kind, and location of the device.

4.6 Specific Provisions

4.6.1 Pressure Requirements

New water systems and water system capital facilities installed to expand distribution shall be designed to maintain a minimum residual pressure of 30 psi at the meter, or property line if there is no meter, under maximum demand flow conditions, excluding fire demand (**Chapters 246-290 WAC and 246-291 WAC**). For water systems requiring fire flow capability, the design shall be adequate to maintain, under fire flow conditions, positive pressure throughout the system and a 20 psi residual pressure in mains supplying fire hydrants in use (**Chapter 246-290 WAC**).

4.6.2 Pipe Sizing and Materials

With the exceptions noted within this document, the minimum pipe diameter shall correspond with the following land use designations: Urban, Commercial, Business Park, Airport, and Industrial - 6-inch diameter. In areas, which are Rural, Parks, Open-space, and in other situations where fire flow is not required under Kitsap County Ordinance and where county land use designations minimize the potential future requirement for fire flow, a smaller diameter pipe may be used if hydraulically justified.

Water main size shall be adequate to deliver fire flow where required and to maintain the pressure requirement defined in **subsection 4.6.1** and by Kitsap County Ordinance.

All water mains shall meet applicable engineering and health standards adopted by the State of Washington or the water purveyor, including **Chapters 246-290 WAC, 246-291 WAC** and **264-293 WAC**.

Water mains serving fire hydrants, either as part of new construction or planned, phased improvements, shall be not less than 8 inches diameter for a dead end line, nor less than 6 inches diameter if looped. Hydrant leads extending less than 50 feet or across a street shall be of a suitable size to carry the required fire flow, but shall not be less than 6 inches diameter. In a dead end cul-de-sac, normal domestic mains may be installed from the last hydrant to remaining residences.

All pipe material shall be equal to or greater than AWWA standard specifications unless previously approved by the local Health District or DOH. All pipe material for new water systems shall be constructed with "lead-free" materials. The lead content for joint compound materials (solder and flux) used for pipe installation shall be less than 0.2 percent in order to be considered "lead-free." The lead content for all installed pipe shall be less than 8 percent in order to be considered "lead-free."

4.6.3 Isolation Valving

Valving shall be installed in a configuration, which permits isolation of lines.

4.6.4 Air and Air-Vacuum Relief Valves

In order to minimize problems associated with air entrainment, the purveyor shall install air or combined air-vacuum relief valves at appropriate points of high elevation in the system.

4.6.5 Blow-off Valves

A blow-off assembly shall be installed on all dead end runs and at appropriate points of low elevation within the distribution system. The blow-off assembly shall be sized to achieve minimum flushing velocity and installed in the utility right-of-way except where an access and construction easement is provided in writing. In no case shall the location be such that there is a possibility of back-siphonage into the distribution system.

4.6.6 Pressure Reducing Stations

A manifold system shall be installed at pressure reducing stations that includes a redundant pressure reducing valve, a bypass valve, or other suitable device, which assures reliability and continuity of service.

4.6.7 Storage

Permanent storage facility requirements are based upon four components:

- Equalizing Storage, required to supplement production from water sources during high demand periods;
- Standby Storage, required as backup supply in case the largest source is out of service; and,
- Fire Storage, required in order to deliver the level of fire flow service identified in the utility's approved plan (see "Fire Flow Requirements" below) for the required duration.
- Dead storage, or the volume of water remaining in the facility that does not satisfy any of the first three components primarily due to elevation head not meeting the 20 psi minimum for fire or standby storage.

Nesting of fire and standby storage must be approved on a case-by-case basis.

As a minimum, sizing of storage facilities shall be adequate to provide for equalizing storage plus the larger of standby or fire storage requirements. However, nesting of fire and standby storage must be approved on a case-by-case basis by the local fire authority. Equalizing and standby storage volumes shall be determined using the **DOH Water System Design Manual.** Fire storage volumes shall be determined using the fire flow and duration requirements of the applicable county or city ordinance and the utility's approved plan. Siting of storage facilities should consider locations, which provide gravity flow.

4.6.8 General Facility Placement

Below-ground facilities shall be located in accordance with the applicable city or county ordinance. Where no ordinance applies, water mains shall be installed at a location, which is compatible with the existing water system, the terrain, and the location of other utilities. In new subdivisions, wherever practical, water mains should be installed parallel to the centerline on the north or east sides of the street.

In addition, all piping, pumping, source, storage, and other facilities, shall be located on public rights-of-way, dedicated utility easements, or property owned by the purveyor. Utility easements must be a minimum of 15 feet in width, and piping shall be installed no closer than 5 feet from the easement's edge. Exceptions to this minimum easement may be approved by the operating water utility. Unrestricted access shall be provided to all public water system lines and their appurtenances and public fire hydrants that are maintained by public agencies or utilities.

4.6.9 Pipe Cover

The depth of trenching, installation of pipes, and backfill shall be such as to give a minimum cover of 36 inches over the top of the pipe. This standard shall apply to transmission, distribution, and service piping. Backfilling up to 12 inches over the top of the pipe shall be evenly and carefully placed. The remaining depth of trench is to be filled in accordance with applicable construction standards identified in **General Provisions.** Materials capable of damaging the pipe or its coating shall be removed from the backfill material.

4.6.10 Water and Sewer Line Separation Distances

Whenever practicable, transmission and distribution water piping shall be separated at least 10 feet horizontally from on-site waste disposal piping drain fields, and/or wastewater gravity or force mains. The bottom of the water main shall be 18 inches above the top of the sewer main. Where local conditions prevent such horizontal and/or vertical separation, closer spacing is permissible where design and construction meet the special requirements of the Department of Ecology criteria for Sewage Works Design. Storm drainage and reclaimed water irrigation piping shall be considered the equivalent of sanitary sewer for the purpose of separation from potable water mains.

4.6.11 Fire Hydrants

Fire hydrants shall be dry, barrel type, equipped with National Standard Threads or other connection devices consistent with the local fire protection authority's requirements, and conform to **AWWA Standard Specification C502** or equal, and shall be approved by the appropriate local fire authority.

4.6.12 Fire Hydrant Location

Fire hydrants shall be located in unincorporated areas in accordance with Kitsap County Ordinance. Within city incorporated boundaries, the location specifications provided in the city fire ordinance or water system design standards shall apply.

Actual location of hydrants shall be identified in the development site plan and shall be approved by the water purveyor and Fire Marshal. Placements shall be made to provide unhindered access for fire hose connection, testing, and maintenance.

4.6.13 Fire Flow Requirements

Water supply facilities for new developments and for expanding public water systems shall be designed to meet the minimum fire flow requirements established in the latest version of Kitsap County or city ordinances.

Systems shall be deemed to be in compliance with these requirements if there is in existence a Water System Plan in accordance with **WAC 246-290** which has been approved by DOH and which indicates that fire flow requirements will be met when specified improvements to the public water system are made.

4.6.14 Maintenance of Fire Protection Facilities

A written operational agreement, which identifies responsibilities for maintenance and testing of fire protection facilities should be negotiated between the applicable fire department or district and water utility.

4.7 Standards Review

The Water Utility Coordinating Committee shall review these standards and their implementation as necessary. Kitsap County Department of Community Development will designate representatives from county staff to participate in the process including input from the Kitsap County Fire Marshal and the fire districts in matters related to fire protection standards. Recommendations for change shall be submitted by the WUCC to the County Commissioners and the Washington State Department of Health Division of Drinking Water Southwest Regional Office for approval and adoption.

4.8 Severability

If any provision of these standards or their application is found to be invalid, the remainder of the standards and their implementation are not affected.

4.9 Group B Standards

All new or expanding Group B systems must adhere to applicable requirements of DOH (**WAC 246-291**) and the Kitsap County Health Department (KCHD). KCHD, as a part of its review authority over

DOH requires new or expanding Group B systems to adhere to WAC 246-291 requirements.

systems having 25 or fewer service connections, distributes a design workbook to systems with nine or fewer connections. These smallest of systems must submit the design workbook after approval by either a professional engineer or Kitsap County certified Group B designer. The KCHD Water System Workbook for New, Expanding, or Existing Group B Water Systems is intended to ensure compliance with applicable Minimum Design Standards discussed in this section. The new workbook standards became effective in the spring of 1992 and are included herein by reference as **Appendix D**. Copies of the revised workbook may be obtained from the KCHD.

Section 5 Utility Service Review Procedure

5.1 Introduction

This Kitsap County Coordinated Water System Plan (CWSP) establishes a set of administrative procedures and water resource management policies for Kitsap County water utilities. The procedures are to guide local officials, citizens, developers, and state and federal regulatory agencies in identifying and developing the necessary facilities for providing adequate water service.

Provisions of the Public Water System Coordination Act require that no new public water system be established within Kitsap County unless it is determined that existing purveyors are unable or unwilling to provide the service in a timely and reasonable manner. The Growth Management Act (GMA) mandates that each applicant for a building permit, which requires potable water, shall provide evidence of an adequate water supply for the intended use of the proposed building. This section presents the administrative procedures for reviewing development proposals and associated requests for water service throughout Kitsap County, identifying the designated purveyor who is willing and able to provide new water service, and documenting availability of water supply.

A general philosophy of the CWSP is that water utility service should not dictate growth patterns. On the contrary, land use policies should establish growth guidelines and designated water utilities should respond to, and provide service commensurate with applicable adopted land use policies.

A general philosophy of the CWSP is that water utility service should not dictate growth patterns

Water system plans must address the water system facilities required to accommodate growth. Growth is projected to occur within most large Group A retail water utility service areas, based upon the County's Comprehensive Plan and city's land use plans. Capital improvements are planned and constructed to conform to the anticipated service requirements associated with those plans.

A proposed land use change could involve a significant financial expenditure on water service infrastructure. Because water utilities must, of necessity, develop their systems to conform with applicable land use plans, any major change in land use may require substantial system improvements to serve proposed growth areas. Therefore, special review procedures will apply to applications, which propose a significant land use change.

The review procedure provided herein recognizes the retail service area boundaries established for existing utilities and the responsibilities the utilities have accepted for providing reliable service within their boundaries. These responsibilities are extended by this CWSP to include system receivership provisions of state law. These responsibilities are set forth in **subsection 5.7** of these review procedures.

5.2 Utility Service Review Procedure

The Utility Service Review Procedure (USRP) identifies the utility in whose designated retail service area proposed new construction lies. It then describes, in order of priority, the available water service options. It also describes options for water service to proposed construction projects lying outside designated retail service areas.

The USRP identifies the utility in whose retail service area proposed construction lies, options for available water service, and options for projects proposed outside the retail service area; the result being the assignment of proposed construction or land use to the designated water utility.

Within the USRP process, reference to "retail service area(s)" means the specific geographical area described in the written agreement required by **RCW 90.116.070(1)** and **WAC 246-293-250**. The retail service area boundary is identified by a map attached to the agreement. The boundary includes the area within which direct, retail service connection to customers is currently available (current service area) and the area for which water service is planned (future service area), if one exists, by the designated utility.

The USRP applies to all construction proposals requiring approval by the Kitsap County Department of Community Development (KCDCD) and/or by the Kitsap County Health District (KCHD). These include: new plat or subdivision development; short plats; land use permits, changes, and approvals; rezones; issuance of residential and commercial building permits; creation of new water systems; resolution of health emergencies arising out of existing public water systems; source site inspections; and other related activities. At the time an application is submitted for permits or approvals involving water supply, or upon request, the KCDCD and KCHD will initiate and administer the review procedure. A flow chart of steps to be followed in the USRP is provided as **Exhibit 5-1**.

The USRP procedures are intended to identify an existing water purveyor willing and able to provide water supply facilities and to include the new construction as a customer. In effect, the result of the USRP is to assign the proposed new construction or land use to the designated water utility. In the event the designated utility is unable or unwilling to provide service, the referral process referenced in subsequent paragraphs should be followed.

Pursuant to State law, water service requests occurring within a contested retail service area or the retail service area of a utility that has not completed either its individual Water System Plan (WSP) or its Interlocal Agreement for establishing retail service area boundaries, may be denied until these issues are resolved. If the affected utilities are unable or unwilling to resolve their retail service area conflicts, the Department of Health (DOH) shall render a determination of who should provide water service following appropriate due process.

5.3 Conforming Construction Proposals that Require Water Service

When construction and associated water service applications conform with land use plans and zoning ordinances, the USRP will generally follow the sequential steps outlined in **Exhibit 5-1**. This procedure is described below.

5.3.1 Administration of the Review Process

The KCDCD and KCHD will coordinate review of all development proposals within Kitsap County, which require water service. The KCDCD will be responsible for ensuring conformance with the applicable comprehensive land use plans, zoning code, and service area agreements for future municipal annexation areas. KCDCD will review building requests for conformance with the appropriate building and fire codes, and water supply requirements. KCHD will coordinate water service requirements. A Water Supply Application Form, (current format shown in **Exhibit 5-2)**, identifies the proposed method of water supply for the applicant.

5.3.2 Individual Water Supply

The review of applications for building permits which propose to use an individual water supply (no more than two equivalent residential units (ERUs) will be coordinated by the KCHD in the following manner.

If the proposed building is outside the designated retail service areas of existing purveyors, the applicant will be required to provide suitable evidence of the availability of an adequate water supply as required by **Kitsap County Board of Health Ordinance No. 1998-6**, and **Section 63 of the Washington State Growth Management Act**.

The Kitsap County Water Utilities Coordinating Committee (WUCC) concluded that water service in urban growth areas (UGA) should generally be provided by utilities with retail service areas designated through the CWSP process. Individual wells may be constructed on parcels in certain circumstances that meet KCHD siting criteria. The KCHD maintains a list of applicants for individual well-drilling activities.

As part of the well application process for parcels in retail service areas, KCHD will require the applicant to obtain a feasibility of water service statement from the applicable water purveyor. The applicant retains the permissive judgment to either drill a private well or connect to the utility.

Individuals proposing well drilling activities in retail service areas will contact the appropriate purveyor concerning the feasibility of connecting to the water system.

Exhibit 5-3 provides a sample Water Availability Letter to be submitted to KCHD if an individual building permit applicant chooses to connect to an existing water purveyor.

5.3.3 Multi-unit Water Supply

For a project where three or more service connections are proposed (more than two ERUs), the applicant must coordinate supply needs with the designated utility, as determined by the KCHD. The KCHD will review proposed water service requests and refer applicants to a designated utility, adjacent utilities, Satellite Management Agency (SMA), or allow the creation of a new utility, as outlined in the steps below.

5.3.4 Proposed Construction within Designated Retail Service Areas

The applicant will be referred to the designated utility as indicated by the official service area maps. In response to a request for water service, the utility will give notice (within 30 days) of its intent to exercise one of the following options, in order of priority. **Exhibit 5-4** is a current copy of the Confirmation or Denial of Service form used to document the options listed below:

- The designated utility will provide direct service through the extension of existing mains and supply.

- The designated utility is not able to provide timely and reasonable, direct service to the proposed activity, then a separate, interim system may be constructed. The applicant will be advised of the utility's design standards and, if the interim system is not built to the designated utilities standards, the potential exists for property owners to be required to pay additional costs at some future date in order to upgrade piping and other facilities for integrating the interim system with the designated utility.

- Once the system is installed to the designated utility standards, the designated utility may own and operate the remote system. If ownership will be delayed, the remote system may obtain contract services for operation and management from the designated utility (if it is an approved SMA) or from another approved SMA.

- If the applicant does not install a water system to the designated utility's standards, then the interim system must at least meet the minimum Group A or Group B standards as specified in the CWSP. In the event that the Group A or Group B standards are less than those of the designated utility, this fact will be noted on the Certificate of Water Availability.

- As a condition of the final plat, short plat, or land use approval, where facilities less than the designated utility's design standards are utilized, it will be the responsibility of the utility to review with the applicant, the potential of paying additional costs at a later date in order to upgrade facilities and integrate the interim system with the designated utility. At the time of plat, short plat, or land use approval, it will become the County's responsibility to ensure that a covenant is entered on the title report for each parcel. The covenant will acknowledge that the owner of the parcel may be responsible for paying to upgrade interim facilities to the designated utility's design standards when it is connected to the designated utility. This covenant will remain on the property title report until the interim system is connected with the designated utility and the upgrades are accomplished.

- Management for remote or satellite systems must be by an approved SMA. It will be the applicant's responsibility to pick an SMA from the approved list developed by DOH and available at the KCHD.

- The designated utility agrees to have direct service provided on an interim basis by an adjacent utility that has existing mains nearer to the project. The terms of the service and eventual transfer to the designated utility should be stated clearly in writing.
- The designated utility denies the provision of service and therefore relinquishes that portion of its retail service area. Service options are, in this case, further described below.

5.3.5 Proposed Construction in Relinquished Retail Service Areas or Non-Designated Areas

If a designated utility relinquishes a portion of its retail service area or the development is in an undesignated (or satellite management) area, the following will occur:

- The KCHD will refer the applicant to adjacent purveyors with a water main within one quarter of a mile of the site, with an approved water system plan that provides for expansion, or an SMA, that is willing and able to serve the new development.
- The priority of referral is as follows:
  - Group A adjacent utility
  - SMA
  - Group B adjacent utility
- If responsibility is accepted by a new purveyor, retail service area boundaries will be changed and contracts established identifying the conditions and responsibilities of service.
- If adjacent purveyors or an SMA does not exist or declines service, the developer may create a new system. (See below.)

5.3.6 New Systems

A new public water system will be authorized to be created only in those instances where existing purveyors are unwilling or not able to provide service. The new water purveyor will be required to submit an Interlocal Agreement, prepare an appropriate water system plan, and provide evidence of water right allocation, if required, as issued by the Department of Ecology (Ecology).

A new public water system will be authorized to be created only in those instances where existing purveyors are unwilling or not able, to provide service.

DOH has established criteria for water system financial viability for all non-municipal water systems under 1,000 services and those systems not regulated by the Washington State Utilities and Transportation Commission (UTC). This criteria is based on the system's ability to fully finance the total cost of developing, constructing, operating, and maintaining the public water system in full compliance with federal, state, and local water quality and water quantity requirements. Recommended guidelines for determining financial viability are provided in DOH's **Public Water System Financial Viability Manual**.

5.3.7 Construction Requirements

Proposed projects must be reviewed with the designated utility to identify the engineering, design standards, financial, managerial, and other requirements of service. Fire flow requirements for proposed projects will be determined by the appropriate city fire authority or the KCDCD, in unincorporated areas, and reviewed by the designated utility prior to its issuing a Certificate of Water Availability. Review by the designated utility will ensure the applicant and purveyor have discussed the requirements of both parties.

Prior to approval of final plats or building permits, the water facilities will be installed or bonded to meet the utility's minimum standards.

5.3.8 Permit and Contract Requirements

Prior to KCDCD's and KCHD's issuance of the required approval/permit, the applicant must obtain a signed Confirmation or Denial of Service from the designated utility, which lists the conditions of service. A current copy of this certificate is shown in **Exhibit 5-4**.

After the preliminary plat or other land use permits are approved, a written contract should be developed and executed between the utility and applicant to formalize the conditions of service responsibilities. Each utility may have special considerations included in its contract.

5.4 Non-Conforming Construction Proposals that require Water Service

If a construction project proposal is not in conformance with applicable land use regulations (e.g., it requires a zoning change, an alteration of applicable land use plans, an increase in fire flow, or other water utility infrastructure upgrading), then each affected utility shall be contacted by the KCDCD or local jurisdictional authority (i.e., city) and allowed to comment on the proposal prior to approval of the project and associated land use changes. By identifying new or additional utility costs associated with changes in land use or zoning or other aspects of the project, the costs of development can be integrated into the decision making process. This will allow the assignment of upgrade costs to customers benefiting from the land use change.

5.5 Appeals Process

The USRP process, described herein, gives existing systems preference for providing water service to new developments. Each service must be timely and reasonable. Issues of what constitutes appropriate conditions of service may arise between applicants for new water service and existing system operators. Other controversies may also arise over implementation requirements of the CWSP. For these reasons, an appeal procedure was developed and adopted

by the Water Utility Coordinating Committee (WUCC). Since the procedure has general application to the CWSP, it is described in **Section 10** - Plan Implementation.

5.6 Special Review Considerations

In the review of development proposals and associated requests for water service, the KCDCD and KCHD shall be guided by the special considerations provided below:

5.6.1 Applications for Service to Non-Residential Properties

Commercial, industrial, institutional, and other non-residential properties may require fire flow that greatly exceeds flows required for single-family housing. These flow requirements are critical to the sizing of the storage, pumping, and piping facilities. For these reasons, the KCDCD shall use the referral process described herein for all proposed, developments that require more than the lowest level of fire flow in urban growth areas and any fire flow required outside urban growth areas.

5.6.2 Expansion of Small Water Systems

During the development of the initial CWSP, an inventory of existing small systems was conducted by the KCHD. This inventory included smaller Group A and Group B systems (i.e., those previously designated as Class 3 and Class 4 systems) and systems pending county approval. Approximately 725 systems in these categories were contacted within the county. Of these, 69 systems proposed future expansion. Currently expanding systems are identified in **Section 8** (Exhibit 8-1) and their retail service areas are recognized and accepted in accordance with this plan when a Interlocal Agreement has been executed. Expansion of small systems is being tracked by KCHD and DOH with respect to the number of active and approved service connections or ERUs. Expansion beyond approved capacity will not be allowed without further review by KCHD or DOH, of system capacity. Non-expanding systems may only serve parcels adjacent to the existing main (which may not be extended), and if capacity within their DOH or KCHD approved number of service connections or ERUs is available. Those parcels will constitute a non-expanding system retail service area, subject to system capacity limits.

5.6.3 Expansion Outside a Utility's Designated Retail Service Areas

A Group A or Group B system desiring to expand outside the utility's designated retail service area will be referred by the KCHD to the utility currently assigned the area in question, if applicable. If the adjacent water system agrees and if the decision is made to revise retail service areas, the system owners must submit to the KCHD revised Interlocal Agreements with revised service area maps (generated by KPUD) and follow the procedures specified in **Subsection 3.6**.

5.6.4 Expansion Within a Utility's Designated Retail Service Areas

Adding customers beyond approved service connections or ERUs will not be allowed for an expanding utility.

Utilities may add customers within their designated retail service area as system capacity permits. Adding customers beyond approved service connections or ERUs will not be allowed for an expanding utility. If the utility is not able or is unwilling to increase system capacity to serve properties within its designated retail service area, then KCHD should proceed as outlined above to assign a water service provider to the area(s) that will not be served by the existing designated utility. The CWSP places responsibility on review agencies to recognize a specific utility's retail service area. In turn, the utility is responsible for effective management within that retail service area.

5.7 Receivership of Failing Systems

The **Revised Code of Washington (RCW)** provides that, whenever an action is brought by the Secretary of Health or a local health officer to place a public water system in receivership, the petition to the court shall include the names of one or more suitable candidates for receiver who have consented to assume operation of the water system. If there is no other person willing and able to be named as receiver, the court shall appoint the county in which the water system is located as receiver.

Through the establishment of service area boundaries in the CWSP and the review process described above, existing utilities have accepted the lead responsibility for providing public water supply within their designed service areas and, therefore, should be proposed as the receiver for the failing system within that area. A logical extension of this responsibility is for the designated utilities to assist in correcting problems of failing systems which are surrounded by their service area and accept ownership of the systems following the upgrade of the system to the utility's standards.

Group A - Water systems with 100 or more permanent connections will be considered candidates to assume the receivership role prescribed in state law for failing systems surrounded by their designated service area. The Secretary of the Washington State Department of Health or KCHD Health Officer will advise the court of the name of the designated utility in any future petition for receivership.

KPUD has accepted responsibility for all areas not claimed by other utilities. The CWSP establishes that KPUD act as Kitsap County's agent for water systems placed into receivership that are not surrounded by other purveyors or if that purveyor refuses to accept responsibility for the system to be placed in receivership. KPUD and Kitsap County established a Memorandum of Understanding on this and other regional resource management issues on May 11, 1992. A copy of this Memorandum is enclosed as **Exhibit 5-5**.

Exhibit 5-1
Utility Service Review Procedure

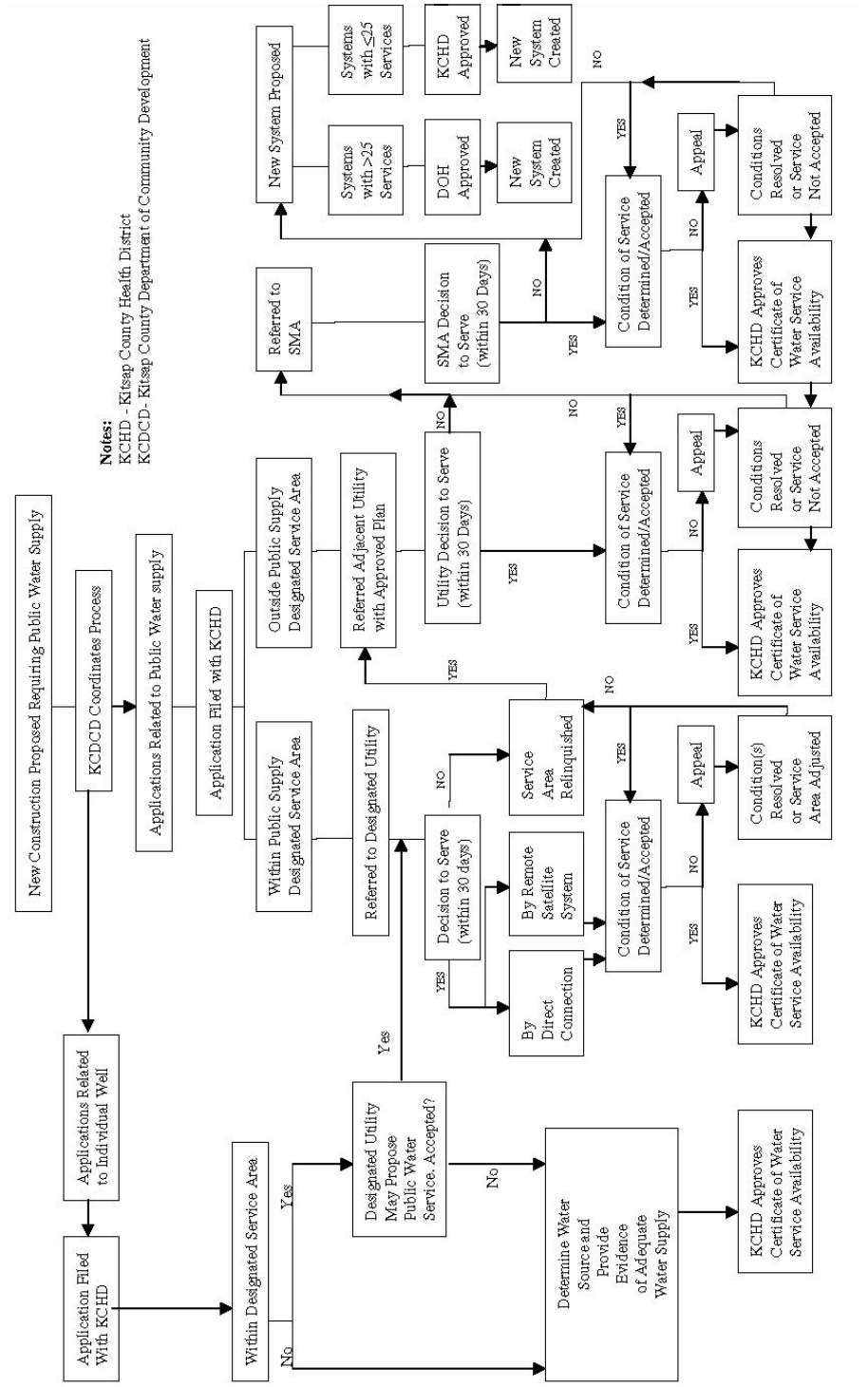


Exhibit 5-2

KITSAP COUNTY HEALTH DISTRICT

Water Supply Application Form

Applicant's Name: _____ Date: _____
Building Site Application Designer: _____
Parcel Location: _____
(Legal description, if short plat, indicate number and lot).

Proposed Method of Water Service:

Public Water Supply
Existing: Name _____ID No.: _____
Water Availability Letter Attached: Yes _____ No _____
Proposed: Yes ____ No _____

Individual Supply

Drilled Well: Proposed _____ Dug: Proposed _____
Existing _____ Existing _____
Spring: _____ Surface water: _____ Other: _____

The Building Site Application (BSA) has been reviewed by a representative of the Health District. A determination has been made by the Health District that soil conditions for installation of an on-site sewage system meets requirements of **Chapter 246-272 WAC** and Ordinance 1999-6. The BSA will be placed in pending until the following has occurred (**circle one of the below**):

1. Source has been developed and tested in accordance with Ordinance 1999-6.
2. Satisfactory wet weather review.
3. Receipt of recorded easements.
4. Receipt of a binding water availability letter.
5. Other _____.

Upon receipt of the circled item, final acceptance by this office will be granted.

_____ _____
Inspector's Signature Date

The BSA has been reviewed by a representative of the Health District. It has been determined by the Health District that site conditions for on-site sewage are not in compliance with Chapter 246-272 WAC and or Local Ordinance 1999-6. Corrections must be made before further processing of the application can occur. The Health District will require that no action take place Exhibit 5-2 (cont.) in regards to the development of the drinking water source until it can be proven that the site is acceptable for installation of an on-site sewage system.

_____ _____
Inspector's Signature Date

==========

This portion to be filled out once site conditions for on-site sewage are in compliance and the water supply has been developed and designed to Health District standards.

A determination has been made by the Health District that this BSA is in compliance with design criteria for both on-site sewage and water supply.

_____ _____
Inspector's Signature Date

Exhibit 5-3
Water Availability Letter

Kitsap County
Health District

109 Austin Drive
Bremerton, WA 98312

WATER AVAILABILITY LETTER

For each commitment for a water hook-up, please complete the section below. This form must be completed by the water purveyor, operations manager or water commissioner. Verbal approval over the phone and completion by any other person other than the authorized personnel for the water supply will not be accepted. In lieu of this form, the water purveyor may use their own form as long as the following items are included: a property address, number of connections requested, number of connections served or committed, water system name and identification number.

The Public Water System _____,
State ID No. _____, is/is not capable of supplying water to
(property owner) _____ for _____ connection(s) located
at: _____.
(legal description, assessors account number or property address)

The above Public Water Supply is approved by the Washington State Department of Health or the Kitsap County Health District for _____ connections and currently serves _____ connections. Connection to the system must be completed within two years or this Availability Letter is void.

****

Purveyor's Name (please print) _____

Signature _____ Title _____
Mailing Address _____ Phone _____
_____

Date _____

This form is for the official use only of the Kitsap County Health District.

Exhibit 5-4
Confirmation or Denial of Service Form

CONFIRMATION OR DENIAL OF SERVICE
KITSAP COUNTY COORDINATED UTILITIES WATER PLAN

Written confirmation or denial of service including remote opportunities for a proposed development is required, in accordance with Kitsap County Resolution 305-1993 and Kitsap County Ordinance 134, from the existing water utility or qualified Satellite Management Agency (SMA) before a new water system can be formed. This form needs to be completed by the water purveyor, operations manager, water commissioners or SMA and returned to the applicant within 30 days of receiving this request.

Applicant Name _____
Property Location _____
Number of Connections Requested _____

TO BE COMPLETED BY THE PUBLIC WATER SUPPLY OR SMA

Public Water System Name _____, ID No. _____
or approved Satellite System Manager Agency _____
can/cannot provide the following services:

Service	Yes	No
1. Direct connection to existing utilities which are within 1/4 mile of your proposed development.		
2. Satellite System Management is available either through: a. Direct ownership of the proposed water supply by the approved satellite system management agency.		
b. Contractual agreement for management services by an approved satellite management agency.		

Purveyor/Satellite System Manager Name (please print) _____

Signature _____ Title _____

Mailing Address _____

Date _____ Day Phone _____

z:/water/dwform/confirm.doc1/597

Exhibit 5-5
Regional Resource Management Issues MOU

MEMO OF UNDERSTANDING
PUBLIC UTILITY DISTRICT NO. 1 OF KITSAP COUNTY
AND
KITSAP COUNTY

WHEREAS, federal and state regulations and standards regarding drinking water quality, water system operations, and water resources are imposing increased responsibilities, restrictions, obligations, and costs on water system owners and operators; and

WHEREAS, the principal agency for regulating water systems in the State, the Department of Health (DOH), is in the process of implementing additional requirements including annual operating permits and financial feasibility tests to gauge the ability of water systems to operate in accordance with applicable standards; and

WHEREAS, the 1990 Growth Management Act (GMA) requires the County to inventory wetlands, aquifer recharge areas and other natural resources which will place constraints on development of new sources of water; and

WHEREAS, the GMA includes provisions requiring the certification of adequacy of individual and community water systems and the preparation of appropriate utility capital improvement plans; and

WHEREAS, water systems that are unable to comply with state and federal standards, represent a potential threat to the public health and safety; and

WHEREAS, Chapter 43.70 RCW requires that counties become the receiver of last resort for water systems within their jurisdictions, that DOH determines have not been effective in resolving deficiencies that threaten public health and safety; and

WHEREAS, Kitsap County does not provide public water service; and

WHEREAS, pursuant to Chapter 43.70 RCW, Kitsap County is authorized to contract to provide services to water systems in receivership; and

WHEREAS, pursuant to Chapter 54.04 RCW, the purpose of the District is to conserve the water resources of the county for the benefit of the people thereof, and to supply public utility service, including water for all uses; and

WHEREAS, pursuant to Chapter 54.16 RCW, the District may make surveys plans, investigations or studies for domestic and industrial water supply, and for matters and purposes reasonably incidental thereto, within and without the District, and compile comprehensive maps and plans showing the territory that can be most economically served by the various resources and utilities, the

Memo of understanding
Page Two

natural order in which they should be developed, and how they may be joined and coordinated to make a complete and systematic whole; and

WHEREAS, the District may construct, purchase, condemn and purchase, acquire, add to, maintain, conduct, and operate water systems, within or without its limits, for the purpose of furnishing the District, and the inhabitants thereof, and any other persons including public and private corporations within or without its limits, with an ample supply of water for all purposes, public and private, with full and exclusive authority to sell and regulate and control the use, distribution, and price thereof; and

WHEREAS, the County and the District desire to work cooperatively because the County is the governmental agency responsible for planning and regulation of land use and the District is recognized by the County as having County-wide responsibility for technical, managerial, financial, operational, and support services needed to provide satisfactory water resource development, protection, and utility service; and

WHEREAS, it may be possible for the District to cost-share expenses related to the takeover of failed systems, the District is neither legally required nor may be financially capable of absorbing all administrative and related compliance costs posed by failed systems.

WHEREAS, under the GMA the County is embarking on a coordinated planning process with all jurisdictions. Growth management plans, prepared and adopted by local general purpose government pursuant to WSDCD guidelines, will designate the distribution, extent and location of various land uses, including public utilities. A capital facilities element will forecast future needs, propose locations of such facilities, and identify a six-year financing plan for funding future facilities. Capital facilities plans must be completed and adopted by June, 1993.

NOW THEREFORE, BE IT AGREED AS FOLLOWS:

Section 1. Goals: The goals of this agreement are to:

A. Protect public health and safety through provision of water service that complies with applicable state and federal standards for water system operations, and drinking water standards.

B. Ensure effective and efficient utilization of water resources.

C. Support adopted land use plans and the goals of the Growth Management Act.

Memo of understanding
Page Three

Section 2. Principles and Procedures: In order to achieve the goals and objective of this agreement, the County and the District agree to the following principles and procedures.

A. The District will act as the County's Agent for all water systems placed into receivership by DOH and the Bremerton-Kitsap County Health District (BKCHD). It is understood that the District will use its best efforts to Facilitate financially feasible solutions to all water systems placed into receivership.

B. Should the District make application for financial assistance to fund a receivership project, the County agrees to assist the District identify and secure the funds and/or grant monies necessary to finance the project. The County further agrees to compensate the District, when requested, for grant, accounting, audit, personnel, and other direct administrative expenses associated with receivership projects incurred by the District.

C. Under GMA, the County has significant authority to require proof of adequate water supply prior to issuance of building permits or subdivision approval. Given the need to assure adequate water supplies are available for project population increases for the next 20 years, the County agrees to consult with the District regarding land use policies and proposed changes as far in advance as possible so that the District can use sound economic judgment in its capital facilities planning and resource management planning.

D. The County and the BKCHD shall establish and enforce such rules and regulations as required to protect public health and safety.

Dated this 11th day of May, 1992.

Kitsap County Commissioner

Kitsap County Commissioner

President, Board of Commissioners
Public Utility District No. 1 of
Kitsap County

Chairman, Board of Commissioners
Kitsap County

Section 6 Satellite Management and Receivership

6.1 Introduction

Satellite Management and Receivership are two different management options that may be utilized separately or together in the case of a failing system.

Whenever it is not feasible to directly connect a new water service application that is in a utility's assigned retail service area, a "remote" system may be created. This level of service constitutes a satellite management condition, which is governed by the conditions within this section. In addition, some utilities own and operate a series of water systems that are not connected and provide operation and/or ownership through satellite management.

In the event that a utility's retail service area and role as a purveyor are relinquished due to receivership action taken by the State, then a new purveyor must be selected or assigned system management responsibilities. The role may be assumed by an established utility, a Satellite Management Agency (SMA), or a newly created public water system as described below.

6.2 DOH Satellite Management Agency (SMA) Requirements

The concept of satellite management has evolved from general guidance contained in **Chapter 246-295 WAC** and the **State Department of Health (DOH) Satellite Management Planning Handbook (October, 1995)**. In general terms, the satellite management program is intended to address situations where small public water systems (e.g., Group B systems) exist or are proposed in areas remote from the supply facilities of larger systems and extension of existing facilities may not be practical in a timely and reasonable manner.

The SMA is a program intended to address service for existing or proposed small, isolated water systems where an intertie is not timely or reasonable.

Prior to 1991, the term SMA (Satellite Management Agency) was applied loosely to those water utilities that provided service to remote systems.

In 1991, the legislature modified the Public Water System Coordination Act rules to establish criteria for designating entities as approved SMAs. The current definition of a SMA is:

> A person or entity that is approved by DOH to own or operate more than one public water system on an area wide-basis, without the necessity for a physical connection between such water systems.

Currently, the laws and policies relating to the provision of satellite management services are embodied in legislation passed in 1995. In that year, the legislature passed **Engrossed Second**

Substitute Senate Bill 5448 (E2SSB 5448) which required all new public water systems to be owned or managed and operated by an 'approved' SMA, where one was available. SMAs must meet the requirements of **WAC 246-295** to become approved. SMAs, which are not approved under **WAC 246-295**, cannot be on the county "approved" list and will not be given referrals of proposed systems.

DOH currently has the following policy regarding SMA service in areas having Coordinated Water System Plans (CWSP):

> If a purveyor has claimed a future served area in a DOH approved Water System Plan (WSP) and identified that it may be served with a remote system, DOH will require that system, in their next WSP update, to include information about their SMA program that satisfies the approval criteria. If the system opts not to submit the SMA information, DOH will not approve the updated WSP until the service area to be served with remote systems is modified.

In regard to objections raised in association with service policies imposed by SMA entities, the appeals process specified in Section 10 will apply to resolve "timely and reasonable" disputes. In contrast, conflicts in areas not under the jurisdiction of a CWSP are resolved by court appeal. All of Kitsap County is under the jurisdiction of this CWSP.

6.3 Current SMA Status

The Kitsap County Water Utility Coordinating Committee (WUCC) developed SMA goals, application conditions, and qualification criteria. These procedures were initiated through the June 4, 1990, resolution by Kitsap County Commissioners adopting the interim CWSP administrative procedures and were reviewed and modified to reflect financial viability. Satellite management activities in Kitsap County are conducted in accordance with **Chapter 246-295 WAC**.

Each county is required to maintain a current list of approved SMAs for their area. The Kitsap County Health District is responsible for this activity, as well as assisting DOH in taking SMA enforcement actions and implementing the Utility Service Review Procedure. Satellite management activities in Kitsap County will be conducted in accordance with state guidelines.

All utilities are recommended to contact the DOH-Southwest Regional Planner to coordinate the requirements for their SMA approval. DOH has committed its staff to assist utilities interested in becoming a SMA.

KCHD is responsible for maintaining a list of approved SMAs, as well as enforcement actions and implementing the USRP.

6.4 Receivership of Failing Systems

RCW 43.70.195, enacted by the 1990 State Legislature, provides that whenever an action is brought by the Secretary of Health or a local health officer to place a public water system in

receivership, the petition shall include the names of one or more suitable candidates for receiver who have consented to assume operation of the water system. If there is no other person or entity willing and able to be named as receiver, the court shall appoint the county in which the water system is located as receiver.

Failing systems may occur anywhere throughout the County or the CWSP study area. Therefore, it is possible to have viable utilities adjacent to or with service areas enveloping a failing system. In this event, the viable utility may be interested in expanding their service area to encompass the failing system. If a direct connection is not initially possible, then a satellite system management arrangement can occur. The CWSP is concerned that an expeditious solution be determined for failing systems. Therefore, individual WSPs are required to include, along with other DOH criteria, a statement of the utility's policy regarding its role in assuming responsibility for any failing systems that are located within their retail service area.

The possibility also exists that approved SMAs may be interested in assuming responsibility for failing systems located in areas not adjacent to or otherwise claimed by other purveyors. In these situations, the County may contact SMAs to establish their interest in this role. In the event no existing utility is willing to accept this responsibility, the County will be designated the purveyor for receivership. Details of the ownership, management, and financing of necessary water system improvements will be specified at that time.

6.5 Implementation Responsibilities

The USRP in **Section 5** outlines the referral process for approved SMAs. The Kitsap County Health District will:

- Maintain the DOH list of SMAs authorized within Kitsap County,
- Assist the DOH in taking SMA enforcement actions,
- Implement the Utility Service Review Procedure.

Section 7 Water Supply Requirements

7.1 Introduction

Projections of water supply requirements for Kitsap County (County) are presented in this Section for years 2000, 2010, 2020, and 2030, based on household and population projections provided by the Puget Sound Regional Council (PSRC). A survey of water demand and source of supply distributed by the Kitsap County Water Utility Coordinating Committee (WUCC) was essential in developing the water supply requirements for the County. Water use data obtained during the Coordinated Water System Plan (CWSP) update from multiple water systems throughout the County were used to calculate average day water supply requirements (on per capita and per household bases), and to calculate a peak day factor. County land use designations and PSRC Forecast Analysis Zone (FAZ) boundaries were used to project water supply requirements within defined areas. The PSRC FAZ boundaries are shown in **Exhibit 7-1**. Urban Growth Area (UGA) boundaries, used to distinguish between rural and urban water usage characteristics, are presented in **Exhibit 7-2**, superimposed on water service areas. Water savings due to water conservation, and supply requirement increases due to potential new industrial water demands were incorporated in the projections as well.

7.2 PSRC Demographic Forecasts

The PSRC released demographic forecasts for Kitsap County in September of 2002 that were based on year 2000 census data. The demographic forecasts for years 2000, 2010, 2020, and 2030 were made at the County, FAZ, and Traffic Analysis Zone (TAZ) levels. The population forecasts were used to project water supply requirements on a per capita basis. The household projections were used to project water supply requirements on a per household basis. The demographic categories are defined by PSRC as follows:

Demographics: Water supply requirements for 2000-2030 are based on population and household demographic projections provided by the PSRC.

- Population – The total number of persons residing in a FAZ.
- Households – The total number of occupied housing units in a FAZ. A housing unit includes any single-family or multi-family household, such as an apartment unit.
- Employment – The total number of jobs located in a FAZ, including part-time, self-employed, proprietors, and military, as well as wage and salary workers, in all industry sectors except resources (agriculture, forestry, fishing, and mining) and construction.

Exhibit 7-3 shows that all three categories are projected to increase at a similar rate through 2030. Population has a compound growth rate of 1.35 percent per year. Households have a 1.59 percent compound growth rate per year, and employment has a 1.65 percent growth rate per year.

Analyses of water supply requirements typically distinguish between single-family and multi-family household water usage characteristics. However, the water demand and supply data

obtained from several water systems during the survey for the CWSP update did not provide this kind of detailed water usage information. Therefore, projections were made based upon the total number of households, with no distinction being made for single-family and multi-family households. Projections for commercial, industrial, and other customer classes are reflected by the employment projections.

7.3 Boundaries

To develop the water supply requirement projections, FAZ boundaries, UGA boundaries, and subarea boundaries were identified and used to assess water demand and water use characteristics. Water supply requirements were projected for the FAZ areas. UGA boundaries were used to distinguish between rural and urban water usage characteristics in the County. The Kitsap County zoning map defines the UGA boundaries for Kingston, Poulsbo, Silverdale, Bremerton, Port Orchard, and Bainbridge Island (see **Exhibit 7-2**).

Where FAZ boundaries did not correlate with UGA boundaries, a percentage of the FAZ was designated as being outside the UGA and inside the UGA. This was accomplished using three approaches. Where possible, the TAZ forecasts, which project population in smaller areas than FAZs, were used to determine where the population growth was occurring. A second approach was to divide the growth based on land area that fell within or outside the UGA. The final approach was to have staff from the County planning department review the areas and comment on the percentage of growth attributed to the area within the UGA.

To analyze supply requirements on a larger scale, forecasts were summarized by dividing the County into four subareas: North Kitsap, Central Kitsap, South Kitsap, and Bainbridge Island (see **Exhibit 7-1**). The subarea boundaries are drawn along section lines that approximate FAZ boundaries in order to facilitate analysis with existing database formats.

7.4 Water System Data

To estimate the total forecasted water use in Kitsap County, the following methodology was used. Water production data from the last three years as reported by water systems throughout Kitsap County, was used in conjunction with the demographic forecast to project future water supply requirements. A Survey of Water Demand and Sources of Supply, dated December 10, 2001, was sent out to all Group A water systems with 50 or more connections. The level of information and data collection methods varied between water systems.

Due to the varying responses to the survey, individual water systems were chosen to represent water supply requirements inside and outside UGAs. Five water systems with complete data were chosen to represent a typical water supply requirement on a per household and per capita basis for areas outside the UGAs. Five water systems within UGAs provided complete data that was used to estimate water supply requirements inside UGAs.

Per capita water supply requirements were calculated by dividing total water supply requirements by the total number of people estimated to be served by the water system. Total water supply requirements include the following components:

- Residential demand – The amount of water sold to residential customers.
- Non-residential demand – The amount of water sold to non-residential (e.g., commercial and industrial) customers. For some systems, such as the City of Bremerton, this component can be quite large (Bremerton's non-residential use is 50% of its average day demand).
- Non-revenue water – The difference between the total amount of water produced by a water system's sources of supply and the total amount of water sold to customers. This includes water used for system flushing and maintenance, fire fighting, as well as water lost to leaks in the distribution system.

To estimate the number of people served by the water system, the total number of households reported to be served by the water system was multiplied by the average number of people per household. Based on year 2000 PSRC data, the average number of people per household in Kitsap County is 2.68.

In the analysis below, values associated with "per capita" or "per household" water use include water for other than residential purposes.

Table 7-1 summarizes per capita water supply requirements based on survey results for the representative water systems outside UGAs, for years 1998, 1999, and 2000. The per capita water supply requirements for the three years were averaged. The average of all of the water systems' three-year average was 88 gallons per capita per day.

Table 7-1
Water Supply Requirements Outside the UGA - Gallons per Capita per Day (1)
(Including Non-Revenue Water)

Water Systems	1998	1999	2000	3 Year Average
Indianola	77	74	75	75
North Peninsula	77	77	72	75
Alpinewood	100	91	93	95
Vinland	102	94	101	99
Keyport	110	91	92	98
Average	**93**	**85**	**87**	**88**

(1) Includes commercial, industrial, and other uses

Table 7-2 summarizes per capita water supply requirements for the representative water systems inside UGAs, for years 1998, 1999, and 2000. The per capita water supply requirements for the three years were averaged. The average of all of the water systems' three-year averages was 133 gallons per capita per day.

Table 7-2
Water Supply Requirements Inside the UGA - Gallons per Capita per Day (1)
(Including Non-Revenue Water)

Water Systems	1998	1999	2000	3 Year Average
Annapolis W.D.	154	137	130	140
City of Bremerton	150	143	145	146
Silverdale W.D.	126	118	124	123
City of Bainbridge Island	127	159	164	150
North Perry W.D.	104	110	100	105
Average	**132**	**133**	**133**	**133**

(1) Includes commercial, industrial, and other uses

Per household water supply requirements were calculated by dividing the total water supply requirement by the number of households reported by the water system.

Table 7-3 summarizes per household water supply requirements for the representative water systems outside UGAs, for years 1998, 1999, and 2000. The per-household water supply requirements for the three years were averaged. The average of all of the water systems' three-year average was 237 gallons per household per day.

Table 7-3
Water Supply Requirements Outside the UGA - Gallons per Household (1) per Day
(Including Non-Revenue Water)

Water Systems	1998	1999	2000	3 Year Average
Indianola	206	197	201	201
North Peninsula	207	207	192	202
Alpinewood	269	243	250	254
Vinland	273	252	271	265
Keyport	295	243	248	262
Average	**250**	**228**	**232**	**237**

(1) A household is a single-family or multi-family living unit. **Includes commercial, industrial, and other uses**

Table 7-4 summarizes per household water supply requirements for the representative water systems inside UGAs, for years 1998, 1999, and 2000. The per-household water supply requirements for the three years were averaged. The average of all of the water systems' three-year average was 356 gallons per household per day, which includes all of the various water uses and should not be confused with actual residential usage per household (or ERU).

Table 7-4
Water Supply Requirements Inside the UGA - Gallons per Household (1) per Day
(Including Non-Revenue Water)

Water Systems	1998	1999	2000	3 Year Average
Annapolis W.D	413	368	349	377
City of Bremerton	402	382	389	391
Silverdale W.D.	338	316	333	329
City of Bainbridge Island	340	426	440	402
North Perry W.D.	279	296	269	281
Average	**354**	**358**	**356**	**356**

(1) A household is one single-family or multi-family living unit. **Includes commercial, industrial, and other uses**

7.4.1 Peaking Factor

Water Use: On a per household basis, average daily water use is 356 gpd inside the UGA and 237 gpd outside the UGA.

Water system data reported on the surveys were also used to calculate a peaking factor for water systems in Kitsap County. A peak day factor was calculated for eight water systems that reported total and maximum day water supply requirements. The peaking factor was calculated by dividing maximum day water supply requirements by the average day requirements.

Table 7-5 summarizes the peak day factors for eight water systems in years 1998, 1999, and 2000, and calculates the average peaking factor of 2.32.

Table 7-5
Peak Day Factors

Water System	1998	1999	2000	3 Year Average
Annapolis W.D.	2.27	2.41	2.51	2.40
City of Bremerton	1.81	1.65	1.75	1.74
Indianola	3.51	2.79	2.97	3.09
Keyport	2.36	2.59	2.43	2.46
North Peninsula	2.16	2.16	2.18	2.17
North Perry W.D.	2.32	NA	2.40	2.36
Silverdale W.D.	2.45	2.00	1.96	2.14
Vinland	2.34	2.28	2.12	2.25
Average	**2.40**	**2.27**	**2.29**	**2.32**

NA - data is not available

7.4.2 Per Capita and per Household Water Supply Requirement Projections

The average water supply requirement factors discussed above were applied to the demographic forecasts in order to develop the water supply requirement projections. The per capita water supply requirement factors were multiplied by the forecast population to determine the per capita water supply requirements for 2000-2030. The per household water supply requirement factors were multiplied by the forecast number of households to arrive at the per household water supply requirements. **Table 7-6** provides a comparison of the two countywide average day water supply requirement projections, indicating that the per-household approach yields a higher projection. For the purpose of this CWSP, the slightly higher projections associated with the per-household approach have been selected as the base projections used in the other analyses which consider conservation and additional industrial water supply requirements. Appendix E contains the detailed water supply requirement projections, organized by method and by subarea.

Table 7-6
Comparison of Per Capita and Per Household Projections (gpd)

Year	Per Capita	Per Household	Difference
2000	26,219,937	26,454,856	234,919
2010	30,314,789	31,696,036	1,381,247
2020	35,098,307	37,738,518	2,640,211
2030	39,229,463	42,559,305	3,329,842

7.4.3 Commercial/Industrial Water Supply Requirements

Industrial Growth: Unforeseen large industrial water demands were incorporated into projections by adding 1.5 mgd by 2010, an additional 1.5 mgd by 2020, and 0.5 mgd by 2030.

The water supply requirement projections are based on past water consumption rates and do not account for the possibility of a new large commercial or industrial water consumer that could potentially raise water supply requirements beyond the projected levels. In order to account for this possibility it was assumed that between 2000 and 2010, new industries with a total water supply requirement of 1.25 mgd would locate in the City of Bremerton's service area, while an additional 0.25 mgd of new industrial demand would develop elsewhere throughout the County. Additional new industrial demands of these same amounts are estimated to develop between the years of 2010 and 2020. Further growth in industrial demand served by the City of Bremerton between 2020 and 2030 is estimated at 0.5 mgd. **Table 7-7** presents the increased average day water supply requirement due to the additional large industries. It must be emphasized that these projected industrial allowances are not based on known or committed new commercial or industrial water users. They are best characterized as reasonable estimates, based on professional judgment.

Table 7-7
Per Household Water Supply Requirements, Including Additional Large Industry Requirements (gpd)

Year	Water Supply Requirement Per Household	Potential New Industrial Water Supply Requirement		Total
		Bremerton (1)	County (2)	
2000	26,454,856	----------	--------	26,454,856
2010	31,696,036	1,250,000	250,000	33,196,036
2020	37,738,518	2,500,000	500,000	40,738,518
2030	42,559,305	3,000,000	500,000	46,059,305

(1) Assumes new industrial water demands of 1.25 mgd by 2010, to be met by City of Bremerton. Additional new industrial demands of 1.25 mgd by 2020, and 0.5 mgd by 2030 are also assumed. This results in a cumulative increase of 3.0 mgd by 2030.
(2) Assumes new industrial water demands throughout the County of 0.25 mgd by 2010, to be met by suppliers other than City of Bremerton. Additional new industrial demands of 0.25 mgd by 2020 are also assumed. This results in a cumulative increase of 0.5 mgd by 2020 that does not increase further.

7.4.4 Effects of Conservation

Per capita water usage in Kitsap County has declined in recent years as water conservation and efficiency measures have been implemented among various water systems throughout the County. Between 1994 and 2002, average gallons per day per residence for six of the larger water purveyors declined from an average of 240 gpd to 210 gpd. WATERPAK, an organization of the larger water purveyors, has pursued an effective conservation program over the past decade. Consumption per Equivalent

Residential Unit (ERU) has declined significantly for each system and water losses have been reduced. In most cases, larger systems have reduced water losses below ten percent of their water production, which complies with the recommended goal set by the American Water Works Association (AWWA).

This continuing water conservation effort will be modified based on requirements developed by the Washington State Department of Health (DOH) in response to conservation mandates set by the 2003 legislature in the Municipal Water Law (MWL).

Conservation Effects: Incorporated into projections at 1% per year for years 2000 - 2010.

The direct effect of revised conservation and water use efficiency efforts on total water supply requirements is difficult to calculate due to other factors, such as weather, which also alter water needs. For the purpose of this analysis, a one percent per year reduction in water supply requirements was assumed for years 2001 through 2010, as shown in **Table 7-8**. Further reductions beyond 2010 are not included, based on the assumption that the majority of conservation gains, using current technology, will likely be realized by that time.

Table 7-8
Year 2000 to 2010 Water Supply Requirements With Conservation

Year	Per Household (gpd) (1)	Projected Cumulative Savings (%)	Cumulative Savings (gpd)	Adjusted Total (gpd)
2000	26,454,856	---	---	26,454,856
2001	26,937,379	1.00%	269,374	26,668,006
2002	27,428,704	2.00%	548,574	26,880,130
2003	27,928,990	3.00%	837,870	27,091,120
2004	28,438,400	4.00%	1,137,536	27,300,864
2005	28,957,103	5.00%	1,447,855	27,509,247
2006	29,485,266	6.00%	1,769,116	27,716,150
2007	30,023,062	7.00%	2,101,614	27,921,448
2008	30,570,668	8.00%	2,445,653	28,125,014
2009	31,128,261	9.00%	2,801,544	28,326,718
2010	31,696,036	10.00%	3,169,604	28,526,432

(1) Projections between years 2000 and 2010 are based on a compound growth rate of 1.82% per year.

7.5 Summary

Table 7-9 compares water supply requirements under the following three scenarios:

- without adjustments,
- with conservation, and
- with conservation and new industry water supply requirement increases.

Projections: Average daily water supply requirements are projected to rise from 26.5 mgd in 2000 to 42.9 mgd in 2030.

Without any adjustments, the total water supply requirement is projected to be 42.56 mgd by 2030. Considering the effects of conservation and additional industrial water supply requirements, the total water supply requirement in 2030 is 42.89 mgd.

Table 7-9
Kitsap County Average Day Water Supply Requirement Projections
(Using the Per Household Projection Method) In Millions of Gallons per Day

Year	Without Adjustments (1)	With Conservation (2)	With Conservation and Industrial Demand (2) (3)
2000	26.45	26.45	26.45
2010	31.70	28.53	30.03
2020	37.74	34.57	37.57
2030	42.56	39.39	42.89

(1) As projected in Table 7-6.
(2) Assumes a one percent reduction per year in water supply requirements for years 2001 through 2010.
(3) Assumes new industries with a water supply requirement of 1.5 mgd between years 2000 and 2010, and additional new industries with a requirement of 1.5 mgd between years 2010 and 2020, and 0.5 mgd between years 2020 and 2030.

In consideration of the conservation ethic embraced by WATERPAK, while pragmatically recognizing the potential for future economic development in the County, the per household average day water supply requirement projection with conservation and additional industrial requirements has been selected as the forecast most appropriate for planning purposes in the context of this CWSP. **Table 7-10** and **Exhibit 7-4** summarize these projections for 2000-2030. Maximum day water supply requirements were calculated using the peak day factor of 2.32, presented in **Table 7-5**.

Table 7-10
Kitsap County Water Supply Requirement Projections
(in mgd)

Year	Average Day Demand (1)	Maximum Day Demand (2)
2000	26.45	61.36
2010	30.03	69.67
2020	37.57	87.16
2030	42.89	99.50

(1) Based on per household approach, including conservation and additional industrial water supply requirements.
(2) Based on peak day factor of 2.32.

Exhibit 7-1

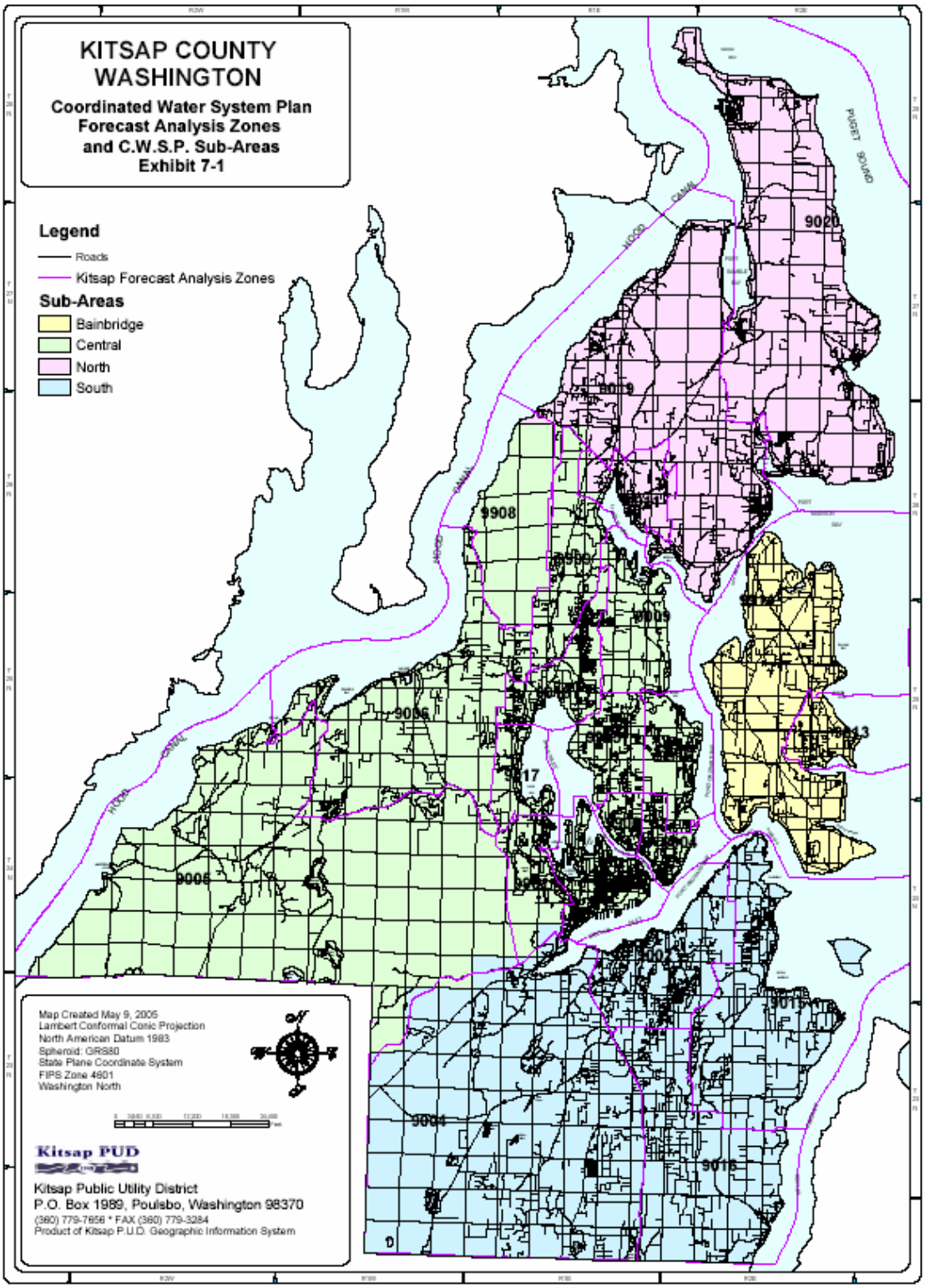

KITSAP COUNTY
WASHINGTON
Coordinated Water System Plan
Forecast Analysis Zones
and C.W.S.P. Sub-Areas
Exhibit 7-1
Legend
Roads
Kitsap Forecast Analysis Zones
Sub-Areas
Bainbridge
Central
North
South
9020
9008
9009
9006
9005
9004
9018
Map Created May 9, 2005
Lambert Conformal Conic Projection
North American Datum 1983
Spheroid: GRS80
State Plane Coordinate System
FIPS Zone 4601
Washington North
Kitsap PUD
Kitsap Public Utility District
P.O. Box 1989, Poulsbo, Washington 98370
(360) 779-7656 * FAX (360) 779-3284
Product of Kitsap P.U.D. Geographic Information System

Exhibit 7-2

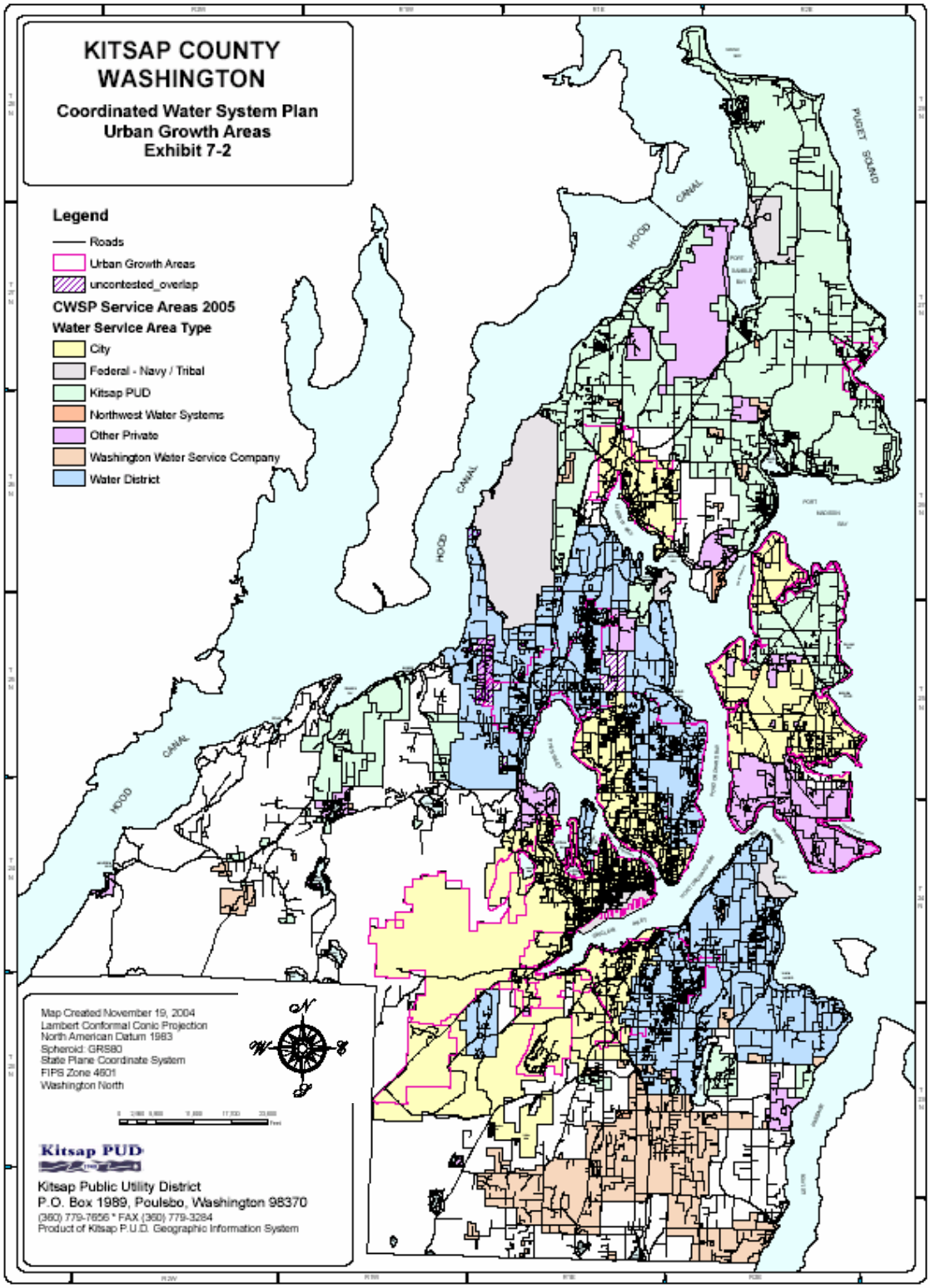

KITSAP COUNTY
WASHINGTON
Coordinated Water System Plan
Urban Growth Areas
Exhibit 7-2
Legend
Roads
Urban Growth Areas
uncontested_overlap
CWSP Service Areas 2005
Water Service Area Type
City
Federal - Navy / Tribal
Kitsap PUD
Northwest Water Systems
Other Private
Washington Water Service Company
Water District
HOOD CANAL
PUGET SOUND
Map Created November 19, 2004
Lambert Conformal Conic Projection
North American Datum 1983
Spheroid: GRS80
State Plane Coordinate System
FIPS Zone 4601
Washington North
Kitsap PUD
Kitsap Public Utility District
P.O. Box 1989, Poulsbo, Washington 98370
(360) 779-7656 * FAX (360) 779-3284
Product of Kitsap P.U.D. Geographic Information System

Exhibit 7-3
Comparison of Population, Household, and Employment Growth

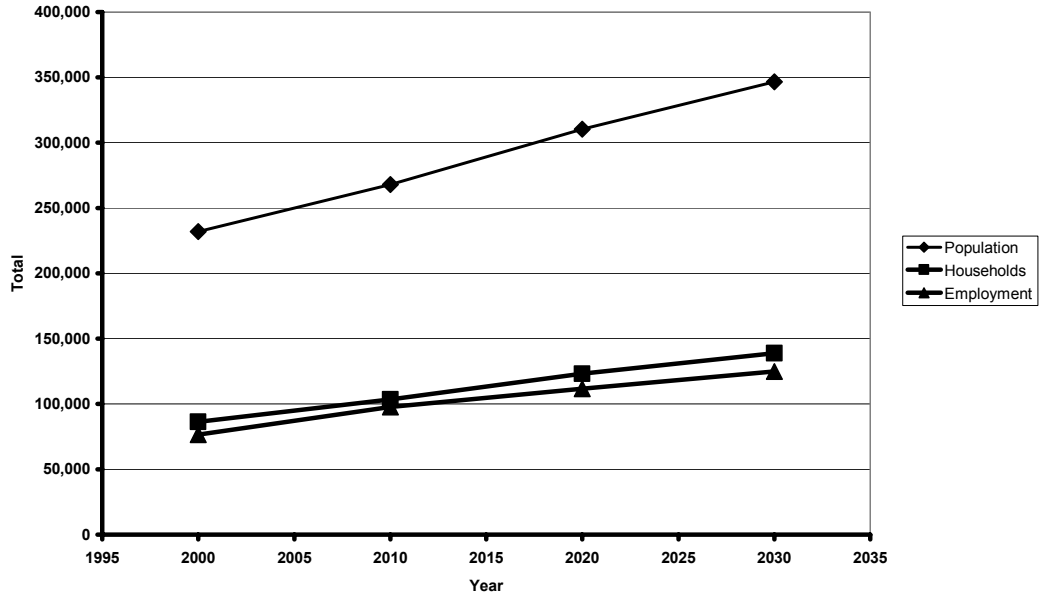
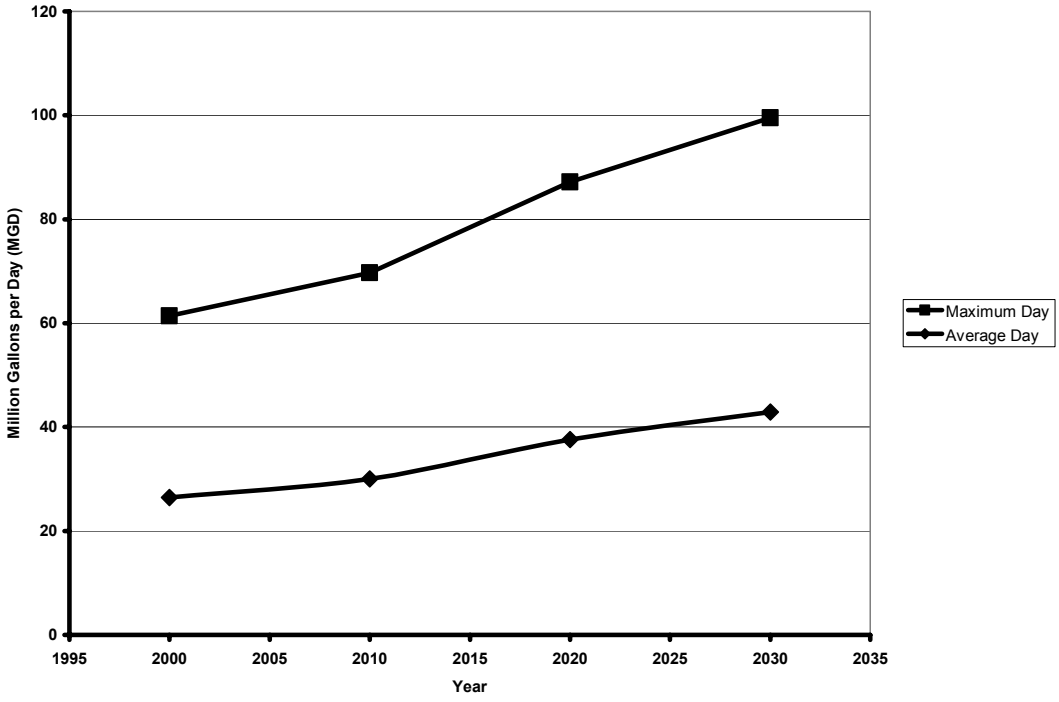


Exhibit 7-4
Kitsap County Water Supply Requirement Forecast



Section 8 Assessment of Existing Water Systems and Water Supply

8.1 Introduction

In 1986, the Kitsap County Department of Community Development (KCDCD) and Kitsap Public Utility District (KPUD) prepared a "Preliminary Assessment of Water Resource and Public Water Source Issues in Kitsap County." This report resulted in the declaration of the Critical Water Supply Service Area (CWSSA) and initiation of the coordinated planning process, which ultimately led to development of the initial Kitsap County Coordinated Water System Plan (CWSP). The following is an update of information that characterizes the status of water system development in the county as previously presented in the initial CWSP (1992):

- The number of public water systems in the County has increased over the past 25 years. There were 450 systems throughout the County reported in 1978, compared to 742 in 1982, 803 in 1986, and 1,162 in 2003[1]. The current number of systems constitutes approximately seven percent of the 16,950 public water systems estimated to exist throughout the State of Washington. The breakdown between the number of Group A and Group B public water systems in 2003 is presented in **Table 8-1**.

Table 8-1
Public Water Systems in Kitsap County, 2003

Group A		
	Community	160
	Transient Non-Community	53
	Non-Transient Non-Community	16
	Subtotal – Group A	229
Group B		
	Subtotal – Group B	933
Total Number of Public Water Systems		**1,162**

- There were approximately 237,000 residents in the County in 2003[2]. The majority of this population receives water from public water systems, while the remainder obtains water from individual household wells. The breakdown of population served by various types of water supply is provided in **Table 8-2**.

Table 8-2
Percent Population Served by Type of Water Supply, 2003

Type of Water Supply	Percent Population Served
Group A Public Water Systems	81%
Group B Public Water Systems	4%
Individual Household Wells	15%
Total	**100%**

[1] Source of data: Department of Health online public water system data (February 2003).
[2] Source of data: Office of Financial Management population estimate for 2003.

- Measures are in place to ensure that the public health concerns affecting citizens throughout the county are adequately monitored and mitigated. Group A water systems must comply with requirements of the Safe Drinking Water Act (SDWA) and WAC 246-290, as administered by the Department of Health (DOH). Group B water systems are also regulated under State law, but are not subject to the SDWA.

- Public notification requirements ensure customers are aware of any issue concerning water quality. The consumer confidence report regulations require all water systems to notify customers about water system quality in an annual report.

- All community and non-transient non-community public water systems are required to have a certified operator, according to the Final Operator Certification Rule adopted by DOH in 2001. While a "grand parenting" clause allows current operators to continue without required certification, all new operators must pass a certification exam.

- Operational and maintenance problems reported by the Kitsap County Health District (KCHD) and DOH are primarily associated with Group B systems. Inadequate system operation, pressure deficiencies, delinquent water quality sampling and reporting, and lack of fire flow capabilities are frequently encountered. Other operational difficulties are a result of operating personnel lacking the proper levels of expertise. New regulations will place increased responsibility on systems to employ state certified operations personnel and to provide improved levels of reliable service, fire flow, and pressure maintenance.

The purpose of this section is to review available data regarding the ability of existing systems to provide water service within their existing and future service areas.

8.2 Water System Inventory

A detailed questionnaire on system facilities was sent to all Group A systems. This questionnaire requested data and information on comprehensive water system plan status, customers served, water sources, installed pumping/diversion capacity, water rights, water usage, system facilities, and other issues. A copy of the most recent water system comprehensive plan was requested from systems that already had not provided one to KCHD. A less detailed questionnaire was mailed to Group B water systems. The primary purpose of this latter contact was to determine which of the smaller systems proposed to expand their service areas in the future and the extent of that proposed expansion.

Water System Inventory: Based on data from surveys sent to water systems, water system plans, and the DOH water system database.

Concurrent with the compilation and analysis of system data, future service area boundaries were reviewed and future water demand was forecast. Once these tasks were essentially completed, an analysis was undertaken to assess the capability of the larger water systems to serve, from existing sources, the needs of current and future customers.

8.2.1 Expanding Systems

Based upon compiled data, it was determined that the majority of the existing utilities are meeting current customer requirements for average day water supply needs. In some instances, shortages exist during the high demand, or peak day periods. The primary future water supply need appears to be in Urban Growth Areas (UGAs).

For this reason, the assessment focused on the ability of systems to meet additional demands primarily in UGAs. The ability of Group B systems to provide reliable water utility service has been a concern of the KCHD and the state. The proliferation of shallow wells associated with Group B systems is a concern because of their impact on stream flows and lack of ability to accomplish water resource management actions that are possible with larger, interconnected water systems with multiple sources.

8.2.2 Existing Facilities

Out of a total of 71 Group A water systems that were contacted in 2001, 28 (40 percent) responded to the survey regarding information about their water systems. **Exhibit 8-1** provides a summary of survey and DOH data for Group A systems with a capacity of 50 or more connections. The information provided in this exhibit includes the number of approved and existing connections, amount of water rights, and source and storage capacity. **Appendix G** provides a summary of connection data for Group A systems serving less than 50 connections. **Appendix H** provides similar information for Group B systems in the county.

Additional information compiled from the survey questionnaire for Group A systems is included in **Appendix I,** "Group A Water Systems in Kitsap County". **Appendix I** provides water production, sales, and detailed storage data on large Group A water systems whom responded to the survey. A response was not received from several utilities and incomplete responses were received in many cases.

8.2.3 Service Area Boundaries

Service area boundaries have been mapped through an iterative process. In certain instances, overlaps in proposed future service areas have occurred. The uncontested future service areas are assumed to be accepted by all utilities. Where contested overlaps occur, the water requirement for the contested area is determined independently. Once a decision is made on a contested overlap area, the service responsibilities will rest with the designated utility (**see Section 5**).

8.2.4 Existing Interties

Exhibit 8-2 provides a listing of hydraulic interties existing between Group A water systems. Other new interties should be initiated to improve overall reliability and hydraulic efficiency, as well as to provide flexibility in supplies to meet future needs, as further discussed in Section 9.

8.3 Water Rights

8.3.1 Types of Water Rights

This discussion of water rights includes only recorded rights established under the permit system as provided in the **Surface Water Code of 1917 (Chapter 90.03 RCW)** and the **Ground Water Code of 1945 (Chapter 90.44 RCW)**. Three other types of water rights must also be recognized.

One type is a claim to a vested right established through actual development and use of surface water before 1917 and ground water prior to 1945. In order to retain such a right, the owner or right holder was required to file a claim under the "**Registration Claims Act" of 1969** for usage that preceded the dates of the surface and ground water rights acts. Such claims are recorded in Ecology's water right claims registry. Most claims have not been evaluated as to their validity. Several factors, including use prior to 1917 for surface water and 1945 for groundwater, must be established to certify a claim's validity. Continued, beneficial use is required to maintain each claim's validity.

A second type is a right established under a permit exemption provision of the ground water code where not more than 5,000 gallons of ground water a day have been developed and used, observing certain restrictions. Wells for individual homes and very small systems (e.g., six or fewer homes) usually fall into this category. Some effort has been made to estimate the quantity of water withdrawn by exempt wells (i.e., Kitsap Basin (WRIA 15) Watershed Planning, Level 1 Assessment).

The third type is federal water rights for such purposes as military reservations and tribal reservations (e.g., treaty rights).

In Kitsap County, claims and exempt wells are numerous and may constitute a significant percentage of the total authorized use of ground water within the county's geographic area. Unfortunately, the validity, and actual quantity of water used or obligated under these two types of water rights are unknown. Quantification of such rights can only be determined with certainty through a general adjudication of water rights (see **RCW 90.03.110 through RCW 90.03.245, and RCW 90.44.220 and 90.44.230**). Likewise, federal water rights have not been quantified.

The multitude of wells being used under claims or the exemption provision of the ground water code and federal rights must be considered in the Coordinated Water System Planning process. They will also be a factor in future ground water right application processing. The ongoing Basin Planning process under the Watershed Planning Act, Ch.90.82 RCW, may be the most appropriate forum for resolving the associated issues that develop.

8.3.2 Water Right Information

Water Right Information: Based on data obtained from Ecology's Water Rights Application Tracking System Database

Exhibit 8-3 provides a summary of water right information for Kitsap County, based primarily upon a review of Ecology water right records. The summary data includes a breakdown of the types of water right records[3] (i.e., certificates, permits, claims, and applications), as well as total annual and instantaneous quantities associated with ground and surface water permits and certificates.

It is important that the water rights data shown in **Exhibit 8-3** be understood to minimize the risk of misuse. The water rights do not reflect actual current usage of the water resource. They only identify the potential maximum legal appropriations that can be made under the water rights held by large Group A systems. Some of the uncertainties with water rights are as follows:

Water Rights Summary:
Certificates: 1,254
Permits: 67
Claims: 8,236

- Numerous water rights still recorded are currently unused or have been totally abandoned and have never been formally relinquished. In general, non-municipal water rights that have not been put to beneficial use in the previous five years are subject to relinquishment.
- Originally developed well or diversion capacities have permanently diminished to a point below the perfected water right amounts due to system deficiencies or source deterioration.
- New permits have been processed instead of changing the place of use, purpose, or point of withdrawal for an existing water right, which subsequently is not used.
- Permit listings reflect authorization to develop and use certain amounts of water, but the status of development is not reflected in the water right data base (e.g., a well may not be capable of producing the amount of water allowed by the permit).
- Numerous water rights were issued under names other than the current holder of the right.
- A number of water rights were never perfected and therefore are of questionable validity.
- Many claims are redundant because they were submitted for each filing period that was opened by the legislature.
- Many claims were submitted for future use, not actual use prior to the established 1917 and 1945 dates, and are therefore are not valid.

[3] Source of water right data: Ecology Water Right Application Tracking System (WRATS) database (December 2001).

Additionally, care should be exercised in the use of the million gallons per day (MGD) conversion figures from either the instantaneous amounts (gpm or cfs) or the annual quantities (acre-feet per year (afy)). For example, in the case of instantaneous withdrawal rates, the conversion from gpm to MGD makes an assumption that all wells can be and are operated continuously for 24 hours a day, which is generally not the case. In the case of converting annual acre-feet to an average daily withdrawal rate in MGD, it should be recognized that water requirements vary throughout the year.

Annual Water Right Quantities:
Municipal: 29,645 afy
Domestic: 26,476 afy
Irrigation: 3,625 afy
Other Uses: 7,399 afy

Exhibit 8-4 is a summary of all groundwater permits and certificates, while **Exhibit 8-5** is a summary of all surface water permits and certificates, organized by subarea and purpose of use category. Some water rights are granted for multiple purposes of use. In such cases, records are categorized according to the purpose of use listed first in the Ecology database. It is also noted that not all rights have an annual quantity shown in the database. For the purposes of this summary analysis, detailed inspection of each water record and estimations of annual quantity were not made in these instances.

Exhibit 8-6 provides a graphical summary of the information portrayed in **Exhibit 8-3**, while **Exhibits 8-7** and **8-8** provides graphical versions of the summary information provided in **Exhibits 8-4** and **8-5**, respectively.

8.3.3 Water Right Relinquishment

The State's relinquishment statutes cite that a water right that has been abandoned or voluntarily not used, in whole or in part, for any period of five successive years, is relinquished to the extent of such non-use and reverts to the State. However, there are exemptions to such relinquishment with definitions of sufficient cause for non-relinquishment set forth in **RCW 90.14.140**. The two exemptions most applicable to public water supplies relate to water rights for standby or reserve water supply or rights for municipal water supply purposes. The 2003 Legislature passed **The Municipal Water Law (HB 1338)** that provided a very broad definition of municipal water supplier and municipal water supply purposes. It also provided that certificates previously issued to public water suppliers were water rights in good standing, even if all of the water had not yet been put to beneficial use.

Exhibit 8-1
Group A Public Water Systems with 50 or More Connections Capacity

SystemName	*	PWS ID Number	Connections		Water Rights(2)			Source Capacity (gpm)	Storage Capacity (gal)	Data Source[1]	System Owner or Op[5]
			Approved	Existing	Qa (afy)	Qi (gpm)	Qi (cfs)				
ALPINEWOOD	*	018404	99	97	44.6	161		300	10,000	System	WW
ANNAPOLIS WATER DISTRICT	*	02600W	6,832	6,825	4,249.0	6,280		4,132	3,000,000	KCHD	
APEX WATER SUPPLY INC	*	02685J	150	125	135.0	190		177	60,000	KCHD	
BAINBRIDGE ISLAND, CITY OF	*	97650T	UND	2,232	2,564.0	3,456	0.35	1,993	2,800,000	DOH	
BEAR CUB WATER ASSOC		16610E	55	55	49.5	107		160	12,022	DOH	
BETHEL EAST		05965L	55	52	17.0	20		120	11,000	KCHD	NWW
BILL POINT WATER		06790L	84	84	64.2	42		66	30,000	KCHD	
B K S		03581D	66	61	35.0	126		180	0	System	WW
BREMERTON, CITY OF - Surface Water [3]	*	08200R 082734	UND	16,811	NA	NA	40.00		33,240,000	System	
BREMERTON, CITY OF - Ground Water - Certificates	*				6,281.0	4,630	NA	13,619		System	
BREMERTON, CITY OF - Ground Water Claims					6,350.0	5,100	NA			System	
BRIDLETREE	*	083672	156	70	700.0	160		160	55,000	System	KPUD
BUCKLIN WATER SYSTEM		66936L	66	66	42.5	139		114	12,500	KCHD	WW
CEDAR GLEN MOBILE HOME PARK		11912J	135	135	31.0	100		232	32,800	KCHD	
CEDARBROOK	*	14001T	56	34	30.0	600		120	0	System	WW
DRIFTWOOD COVE	*	19945C	120	62	32.0	50		50	83,000	System	KPUD
ELDORADO HILLS	*	22750C	157	145	69.0	225		210	254,000	System	KPUD
EMERALD HEIGHTS	*	23290U	90	78	90.0	150		152	66,000	KCHD	
ERLAND POINT WATER CO	*	23850K	1,001	616	1,344.0	900	0.25	500	350,000	System	
FRAGARIA LANDING	*	266511	99	73	32.0	98		177	28,000	DOH	
FROG POND WATERS INC	*	26627B	529	515	283.6	294		264	270,000	KCHD	
GALA PINES WATER	*	270602	80	52	54.0	154		150	50,000	System	KPUD
GLENWOOD STATION		00561P	52	53	25.0	100		100	40,000	DOH	WW
HARBOR HEIGHTS		31001N	70	70	22.0	100		135	20,000	KCHD	WW
HINTZVILLE ACRES		10440K	60	59	32.5	105		82	11,000	KCHD	WW
HOLLY	*	33690C	99	75	26.0	110		85	30,000	KCHD	
HORIZONS WEST	*	343754	1,122	900	449.0	856		1,210	232,000	KCHD	WW
INDIAN HILLS Estates		01966V	50	48	75.0	100		110	31,700	System	WW
INDIANOLA [4]	*	35650F	817	638	300.4	500		481	280,000	System	KPUD
ISLAND LAKE WATER CO	*	36150W	278	264	92.0	80		140	131,000	KCHD	
ISLAND UTILITIES	*	57776D	455	108	336.0	300		310	358,700	DOH	
KEYPORT	*	38550J	827	386	858.0	650		600	400,000	System	KPUD
KITSAP WEST MOBILE HOME PARK		42635C	146	96	45.0	250		80	7,000	DOH	
LITTLE TREE		022368	54	54	36.0	100		70	30,000	DOH	WW
LONG LAKE VIEW ESTATES	*	48031X	399	358	152.4	260		212	186,704	System	KPUD
MAINLAND VIEW MANOR		472480	57	53	32.5	150		150	0	DOH	WW
MANCHESTER STATE PARK		SP5007	UND	67	NA	NA		INPORT	0	DOH	
MANCHESTER WATER DISTRICT	*	507002	4,371	2,946	1,673.7	2,260		3,630	3,200,000	KCHD	
MARTELL MOBILE MANOR		51867D	79	79	39.5	171		140	40,000	DOH	
MCCORMICK WOODS	*	40529X	750	607	450.0	600		1,830	570,000	KCHD	COPO
MEADOWMEER WATER SERVICE ASSN	*	532750	335	279	150.0	250		320	235,000	KCHD	
MILLER BAY	*	54683T	460	398	112.0	200		170	167,000	System	KPUD
MINTER CREEK RAPIDS	*	551750	55	49	93.0	250		235	0	System	WW
NAV UNDERSEA WARFARE CTR KEYPORT	*	90520E	UND	186	NA	NA	0.00	1,000	600,000	DOH	
NAVY YARD PARK	*	43294Y	124	99	48.0	52		52	110,000	System	KPUD
NEWBERRY HILL	*	06136C	140	40	1,720.0	1,950		100\200	749,000	System	KPUD

Exhibit 8-1 (cont)
Group A Public Water Systems with 50 or More Connections Capacity

SystemName	*	PWS ID Number	Connections		Water Rights(2)			Source Capacity (gpm)	Storage Capacity (gal)	Data Source[1]	System Owner or Op[5]
			Approved	Existing	Qa (afy)	Qi (gpm)	Qi (cfs)				
NORTH BAINBRIDGE	*	599949	2,028	1,651	1,974.0	1,475		911	860,000	System	KPUD
NORTH PENINSULA	*	051220	5,139	4,031	2,341.5	1,880		1,880	2,562,000	System	KPUD
NORTH PERRY AVENUE WATER DISTRICT	*	60950M	7,520	6,046	4,089.6	4,540		3,995	4,750,000	System	
OLYMPIC VIEW MOBILE MANOR		63497U	76	76	13.0	26		70	5,480	DOH	
PARKVIEW TERRACE	*	66215M	1,067	757	587.1	748		1,580	169,000	KCHD	WW
PINE LAKE MOBILE HOME EST 1 3		67397Y	82	73	48.6	112		138	5,000	KCHD	
PORT MADISON WATER COMPANY	*	68750W	144	98	80.0	30		158	65,000	System	
PORT ORCHARD, CITY OF	*	68900V	UND	1,935	2,330.0	1,600		2,600	3,300,000	KCHD	
POULSBO, CITY OF	*	691506	UND	3,801	2,147.0	1,940	1.20	2,060	3,050,000	KCHD	
PRIDDY VISTA		69350E	85	80	56.0	47		123	20,000	KCHD	
PUGET SOUND NAVAL SHIPYARD	*	03468C	UND	2,918	NA	NA		INPORT	2,500,000	DOH	
ROCKAWAY BEACH WATER	*	734507	88	66	80.0	34		80	132,000	KCHD	COBI
ROCKY POINT WATER DISTRICT 12	*	02052E	UND	543	NA	NA		INPORT		KCHD	COBI
SANDY HOOK PARK COMMUNITY CLUB	*	759500	146	100	80.0	160		57	94,500	KCHD	NWW
SCENIC BEACH STATE PARK		SP780J	UND	63	NA	NA		65	20,000	DOH	
SEABECK	*	031345	300	152	3,000.0	2,000		600	580,000	System	KPUD
SEA VIEW & OLALLA	*	769209	99	66	55.0	130		130	20,000	System	WW
SILVERDALE WATER DIST 16	*	793006	7,731	5,172	4,664.9	4,835	0.78	6,730	5,351,000	KCHD	
S'KALLAM - LOWER - CWS		IH650R	UND	92	NA	NA		36	138,000	KCHD	
S'KALLAM - UPPER- CWS		IH466V	UND	80	NA	NA		179	127,000	KCHD	
SOUTH BAINBRIDGE WATER	*	81451M	1,415	1,056	902.5	767	0.11	625	607,000	System	
STRATTONWOOD	*	84618N	99	72	40.5	160		160	30,000	KCHD	WW
STRAWBERRY HILLS		84625C	94	94	83.7	125		125	80,000	System	KPUD
SUBASE BANGOR	*	02714B	UND	1,292	NA	NA		3,050	3,500,000	DOH	
SUNNYSLOPE WATER DISTRICT	*	85550H	486	399	145.6	200		270	375,000	KCHD	
SUQUAMISH	*	864005	2,965	1,335	1,456.0	1,300		1,340	805,000	System	KPUD
SURFCREST Park		86450E	54	47	47.0	105		110	50,000	KCHD	
TAHUYEH LAKE COMMUNITY CLUB	*	871166	239	221	2,000.0	334		196	125,000	KCHD	
VIEW SIDE COMMUNITY WATER		91850N	64	62	36.0	125		175	40,000	KCHD	KPUD
VINLAND	*	91923K	1,489	966	704.4	890		1,530	1,112,000	System	KPUD
WICKS LAKE RANCHES	*	967287	230	220	142.0	300		225	60,000	System	WW
Totals		**75**	52,270	69,664	56,370	56,239	42.7	63,216	78,326,406		

Notes:

* **Expanding Water System**

PWS = Public Water System; Qa = Annual Quantity; Qi = Instantaneous Quantity; afy = acre-feet per year; gpm = gallons per minute; cfs = cubic feet per second

UND - Undetermined by DOH - System sets capacity, NA - Not Applicable

(1) Data obtained from the Department of Health (DOH) Drinking Water Automated Information Network (DWAIN) (November 2001), KCHD Database , or input from individual system.

(2) Data obtained from the Department of Ecology (DOE) Water Rights Application Tracking System (WRATS) December 2001 or input from individual system (#). Includes allocated amounts associated with permits and certificates. Totals are shown for systems that have multiple water rights. Data in WRATS are organized by water right owners, not by water system name. Therefore, this table may not present accurate water right information pertaining to those systems for which the owner's name differs from the water system name.

(3) The City of Bremerton also exercises surface water claims. The total Qi for these claims is 23 cfs, associated with Gorst and Anderson Creeks, which are used as emergency supplies. The City also holds an additional 2 cfs in surface water claims for Charleston Creek, which is currently not used as a source of supply.

(4) The Indianola Water System also exercises ground water claims. The total Qi for these claims is 125 gpm, and the total Qa for the claims is 7.5 afy.

(5) System Operator or Owner: COB-City of Bremerton, COBI-City of Bainbridge Island, COPO-City of Port Orchard, KPUD-Kitsap Public Utility District, NWW-Northwest Water, WW-Washington Water Service

Exhibit 8-2
Existing Interties for Group A Water Systems

Health ID	System Name	Intertie With	Location	Size	Meter	Purpose
08200R	Bremerton, City of	North Perry Ave Water Dist.	Echo & Yoder	8"	Yes	Emergency
08200R	Bremerton, City of	Port Orchard, City of	Old Clifton Rd.	12"	Yes	Wholesale
08200R	Bremerton, City of	Rocky Point Water Dist. 12				
08200R	Bremerton, City of	Jackson Park Naval Housing	Austin Dr., Root Court			
08200R	Bremerton, City of	Puget Sound Naval Shipyard				
38550J	Keyport	Naval Undersea Warfare Ctr		8"	Yes	Emergency
90520E	Naval Undersea Warfare Ctr	Keyport	Main Gate	8"	Yes	Emergency
51220	North Peninsula	Brazeau Mobile Park		2"	Yes	Emergency
60950M	North Perry Ave Water Dist	Bremerton, City of	Marwood Dr.	8"	Yes	Emergency
68900V	Port Orchard City of	Annapolis W. D.	Mitchell-near Perry	10"	No	Emergency
68900V	Port Orchard City of	Bremerton, City of	SR 16 near Anderson Hill Rd	12"	Yes	Surplus
691506	Poulsbo, City Of	Vinland	Finn Hill	12"	Yes	Emergency
03468C	Puget Sound Naval Shipyard	Bremerton, City of				
02052E	Rocky Point W. D. 12	Bremerton, City of				
IH466V	S'klallam Upper	North Peninsula	Hansville Hwy	6”	Yes	Wholesale
IH650R	S'kllalam Lower	North Peninsula	Hansville Hwy	6”	Yes	Wholesale
91923K	Vinland	Poulsbo, City Of	Finn Hill Rd.	12"	Yes	Emergency

Exhibit 8-3
Summary of Water Rights Information

	North Kitsap	Bainbridge Island	Central Kitsap	South Kitsap	Total
Number of Water Right Records					
# of Certificates	262	139	440	413	1,254
# of Permits	17	9	19	22	67
# of Claims	2,112	1,476	2,395	2,253	8,236
# of Applications	67	28	61	86	242
Summary of Permit and Certificate Quantities[(1)]					
Ground Water Rights					
Qa (afy)	10,965	10,282	26,649	17,044	64,940
Qa (mgd)	9.78	9.17	23.77	15.20	57.93
Qi (gpm)	12,864	11,618	26,424	23,452	74,358
Qi (mgd)	18.52	16.73	38.05	33.77	107.08
Surface Water Rights					
Qa (afy)	762	102	715	626	2,205
Qa (mgd)	0.68	0.09	0.64	0.56	1.97
Qi (cfs)	28.89	2.71	38.13	41.26	110.99
Qi (mgd)	0.04	0.00	0.05	0.06	0.16
Total					
Qa (mgd)	10.46	9.26	24.41	15.76	59.90
Qi (mgd)	18.57	16.73	38.10	33.83	107.24

Notes:

Qa = Annual Quantity

Qi = Instantaneous Quantity

afy = acre-feet per year

cfs = cubic feet per second

mgd = million gallons per day

Source of Data: Ecology's Water Right Application Tracking System (WRATS) Database (December 2001)

Footnote:
(1) All water rights, permits, and certificates within Kitsap County, including municipal, commercial/industrial, domestic, irrigation, and rights for all other purposes of use.

Exhibit 8-4

Summary of Ground Water Rights Information[(1)]

	North Kitsap	Bainbridge Island	Central Kitsap	South Kitsap	Total
Municipal					
Qa (afy)	3,606	1,948	15,529	8,388	29,471
Qi (gpm)	3,335	2,150	13,155	8,932	27,572
Domestic					
Qa (afy)	6,372	4,931	8,253	6,414	25,970
Qi (gpm)	7,916	6,662	10,114	10,844	35,536
Commercial/Industrial					
Qa (afy)	0	0	30	56	86
Qi (gpm)	0	0	315	360	675
Irrigation/Stock Watering					
Qa (afy)	505	148	646	900	2,199
Qi (gpm)	1,223	416	1,415	2,308	5,362
Fish Propagation/Wildlife Support					
Qa (afy)	460	3,255	2,191	1,286	7,192
Qi (gpm)	355	2,390	1,425	1,008	5,178
Recreation					
Qa (afy)	22	0	0	0	22
Qi (gpm)	35	0	0	0	35
Total					
Qa (afy)	**10,965**	**10,282**	**26,649**	**17,044**	**64,940**
Qi (gpm)	**12,864**	**11,618**	**26,424**	**23,452**	**74,358**

Notes:
Qa = Annual Quantity
Qi = Instantaneous Quantity
afy = acre-feet per year
cfs = cubic feet per second
mgd = million gallons per day

Source of Data: Ecology's Water Right Application Tracking System (WRATS) Database (December 2001)

Footnotes:
(1) Includes only water right permits and certificates.

Exhibit 8-5

Summary of Surface Water Rights Information[1]

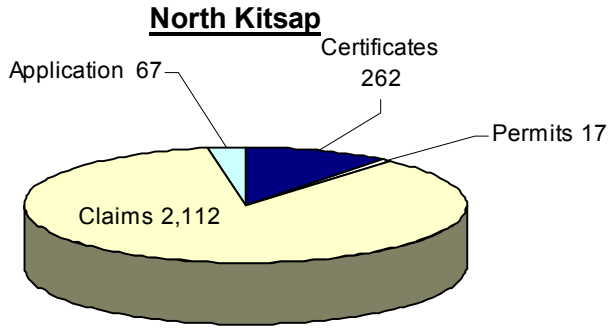
	North Kitsap	Bainbridge Island	Central Kitsap	South Kitsap	Total
Municipal					
Qa (afy)	--	0	174	--	174
Qi (cfs)	5.00	0.00	16.35	26.35	47.70
Domestic					
Qa (afy)	411	4	44	48	506
Qi (cfs)	1.58	0.27	2.11	1.75	5.71
Commercial/Industrial					
Qa (afy)	--	0	0	--	0
Qi (cfs)	0.02	0.00	0.00	0.50	0.52
Irrigation/Stock Watering					
Qa (afy)	337	97	441	551	1,426
Qi (cfs)	10.89	1.30	10.75	8.37	31.31
Fish Propagation/Wildlife Support					
Qa (afy)	14	1	14	27	56
Qi (cfs)	10.84	0.44	7.09	3.12	21.49
Recreation					
Qa (afy)	--	0	42	1	43
Qi (cfs)	0.15	0.00	0.70	0.32	1.17
Power					
Qa (afy)	--	--	--	--	0
Qi (cfs)	0.41	0.70	1.13	0.85	3.09
Total					
Qa (afy)	**762**	**102**	**715**	**626**	**2,205**
Qi (cfs)	**28.89**	**2.71**	**8.13**	**41.26**	**110.99**

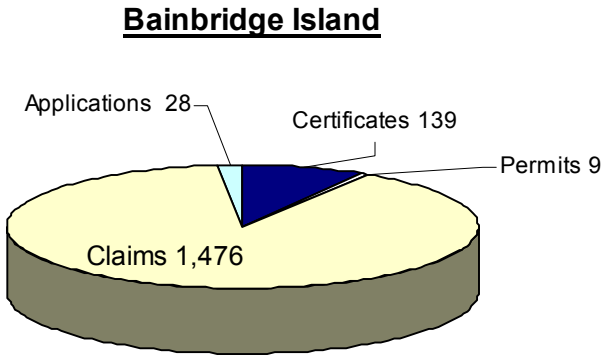
Notes:
Qa = Annual Quantity
Qi = Instantaneous Quantity
afy = acre-feet per year
cfs = cubic feet per second
mgd = million gallons per day

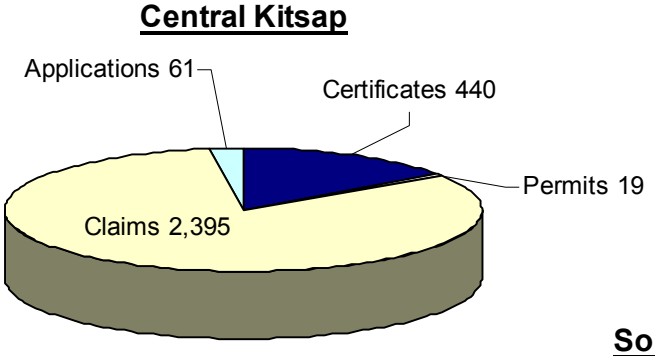
Source of Data: Ecology's Water Right Application Tracking System (WRATS) Database (December 2001)

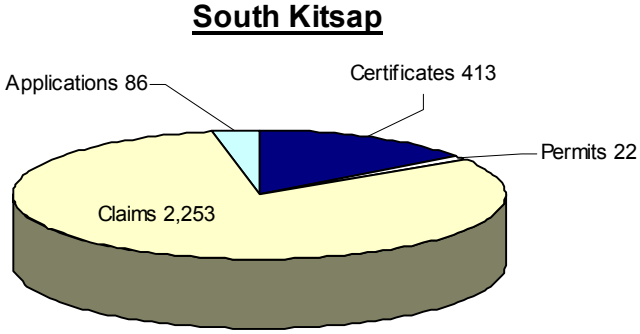
Footnote:
(1) Includes only water right permits and certificates.

Exhibit 8-6
Summary of Number of Water Rights Records





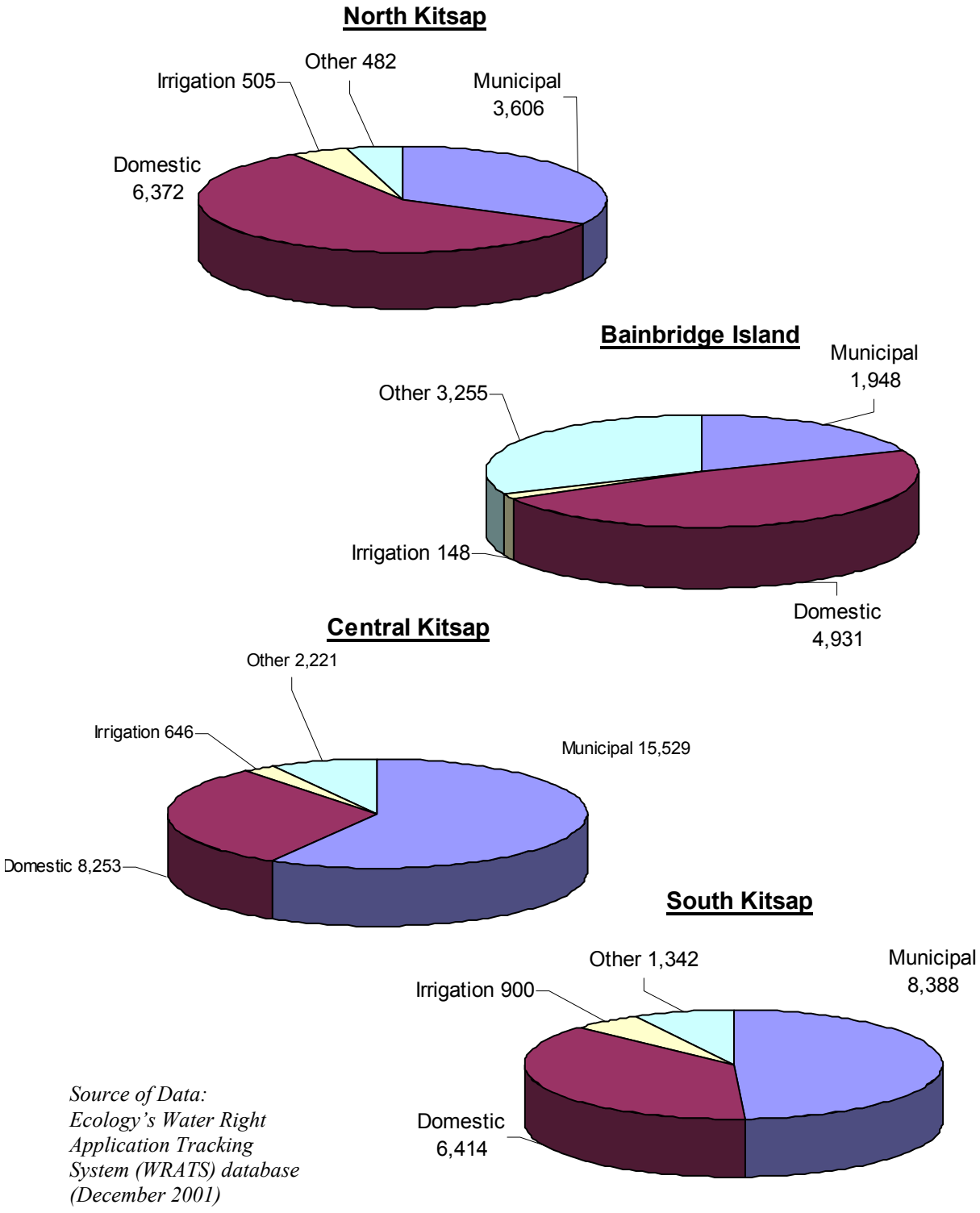




Source of Data: Ecology's Water Right Application Tracking System (WRATS) database (December 2001)

Exhibit 8-7

Summary of Ground Water Rights Annual Quantities (in acre-feet per year)

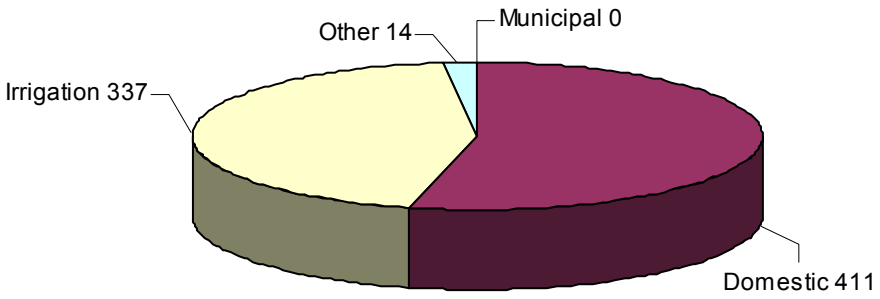


Source of Data: Ecology's Water Right Application Tracking System (WRATS) database (December 2001)

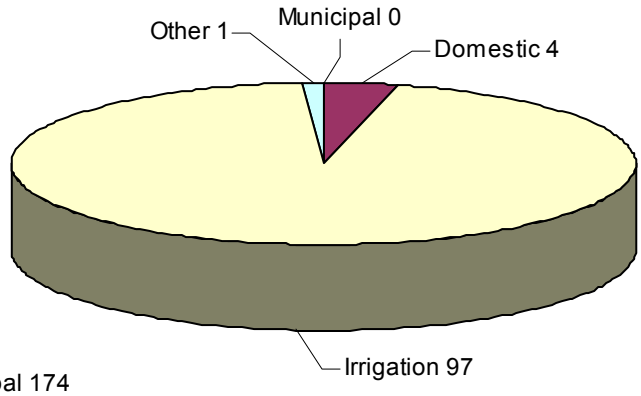
Exhibit 8-8

Summary of Surface Water Rights Annual Quantities (in acre-feet per year)

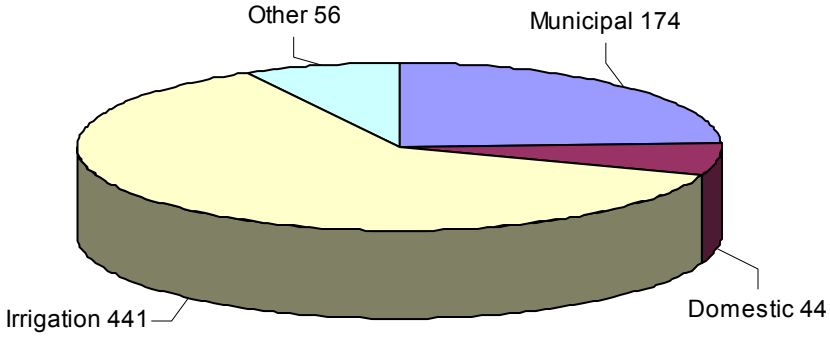
North Kitsap



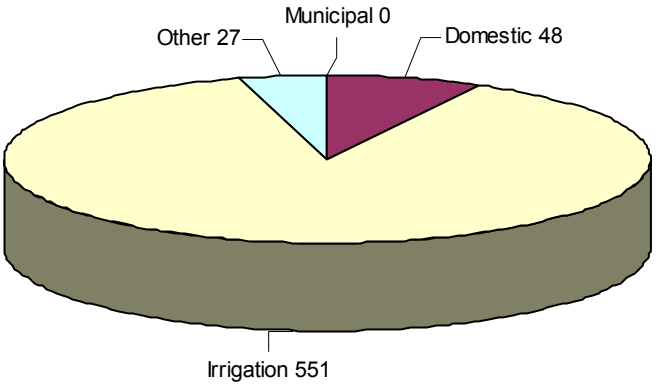
Bainbridge Island



Central Kitsap



South Kitsap



Source of Data: Ecology's Water Right Application Tracking System (WRATS) database (December 2001)

Section 9 Regional Water Supply Plan

9.1 Introduction

It is estimated that approximately 85 percent of the population in Kitsap County is currently served by public water systems. The remaining 15 percent receives its domestic water supply from individual sources, primarily wells. Currently, public water supply system needs of approximately 27 MGD (average day) are met through a combination of surface and groundwater sources. The largest water utility, the City of Bremerton, provides about 30 percent (8 MGD) of this total from a combination of surface water (the Union River) and groundwater supplies (wells). All other large Group A water utilities rely on groundwater.

Future demands will increase significantly if the population growth projections by the State Office of Financial Management are accurate. In the 1980s and 1990s, the State's water resource management policies became increasingly complex and challenging as a result of State Supreme Court decisions, slow response by the State Legislature, as well as policy and interpretation changes by Ecology. In spring of 1990, meetings were convened to address water resource management and allocation issues having critical statewide significance. The outcome of the meetings was development of the "Chelan Agreement" which led to a series of legislation in the 1991 and 1992 legislative sessions. Among several of these legislative actions were the following key efforts:

- Increased emphasis placed on water resource conservation,
- Creation of a "FORUM" of representatives from the meetings' stakeholder groups to evaluate water resource issues and make consensus recommendations to the Legislature and Ecology
- Establishment of one pilot area in both eastern and western Washington for development of regional water resource management plans.

The FORUM subsequently identified issues regarding seawater intrusion, minimum in-stream flow requirements, hydraulic continuity between surface and groundwater, conservation, and other matters that required reevaluation of current water law, regulations, and policy.

Realizing the need to resolve its short and long-term resource planning needs through development of a regional water resource management plan, Kitsap County requested to become the western Washington pilot area. The management plan would have addressed issues regarding supply development, water resource management, conservation, reuse, water rights issuance, identification of unused or invalid water rights and claims, interties and joint facilities, and other matters. Unfortunately, Kitsap County was not selected. In 1994, the state expanded the pilot study water management program to conduct basin assessments in 15 of the state's Water Resource Inventory Areas (WRIAs). The assessment is the first step in developing a local water resource management plan. Again, the Kitsap WRIA (No. 15) was not chosen by the state to be funded for a basin assessment. Because of the importance of getting started on the process,

Kitsap PUD funded an Initial Basin Assessment for the Kitsap County portion of WRIA 15. Under an agreement with the State Department of Ecology (Ecology), the assessment was produced, underwent a peer-review process, and was published in October 1997 (Kitsap County Initial Basin Assessment – Department of Ecology File Technical Report No. 97-004). The 1998 legislature passed The **Watershed Management Act (RCW 90.12/ESHB 2514)**, a bill that established a program of basin planning for individual or groups of WRIAs. Basin assessment is an integral part of the process. In August 1999, Kitsap County initiated the process for WRIA 15, which includes the entire Kitsap peninsula. Initial Basin Assessments have been completed for Kitsap County and WRIA 15 (Kitsap Basin [WRIA 15] Phase II – Level 1 Assessment, Golder Associates Inc., June 21, 2002), an important step in the Basin Planning process. Follow up assessments are being conducted. The Basin Planning process is expected to take several years and the draft plan is scheduled to be completed in spring 2005. The Kitsap County CWSP will be an integral part of the process, but may have to be revised if the Basin Plan contains provisions that are not compatible.

The CWSP addresses various supply development alternatives while attempting to incorporate state and local direction on growing communities, municipal purpose, hydraulic continuity, and several other important water right policy areas. Continuation of a progressive and realistic water conservation program is included as a fundamental element of the regional water supply strategy. This section of the CWSP describes the approach for regional solutions to water resource needs and future source development options as well as the process used for consideration of environmental, economic, and other factors related to the options, alternative strategies, and recommendations.

Future water demands are to be met via a tiered implementation strategy.

As populations grow and population centers shift throughout the region, over time it may be necessary to develop an effective network of source, storage, transmission, and intertie piping to transport water resources to meet demand. Existing water resources throughout the county may be more effectively utilized by transferring or sharing available resources through an integrated system of mains constructed between systems. In some cases, the development of new sources may be preferable due to factors such as impact on existing sources by growth, proximity to regional transmission, and environmental impact of existing sources. In the event major supplies are developed in remote areas of the County, an effective network of transmission will be required when existing sources that are near population centers can no longer meet demand.

The recommendations in this section are based on a tiered implementation strategy to meet the future demands of Kitsap County. It is apparent that beyond the continued supply development activities of individual utilities, the implementation of a supply strategy throughout the County calls for a focused, coordinated effort. As noted earlier in **Exhibit 5-5**, a Memorandum of Understanding between the County and KPUD designates the District as having County-wide responsibility for technical, managerial, financial, operational, and support services needed to provide satisfactory water resource development, protection, and utility service. Therefore, it is anticipated KPUD will need to work closely with utilities throughout Kitsap County and other governmental agencies to encourage resource development to obtain adequate water supplies and water rights throughout the County.

9.2 Regional Water Supply Requirements

Population projections and water demand forecasts for Kitsap County are described in **Section 7**. **Exhibit 9-1** provides a comparison between these forecast demands and existing water rights within the County. Projected average day demands in year 2030 are 42.89 MGD, compared to the total annual quantity of all municipal and domestic water rights in the County (55.72 MGD), including claims used by Bremerton. However, a more meaningful comparison is made in **Exhibit 9-1** between projected demands and the total annual quantity of water rights held by Group A water systems serving greater than 50 connections. This is informative as it will likely be these systems that serve the majority of population growth in the County. Based upon an estimated total annual water right quantity of 50.29 MGD for these systems[1], water rights appear to be sufficient to meet demands beyond 2030. Full utilization of the existing water rights will require expansion of present source capacities and construction of integrated water delivery infrastructure. Even with implementation of such actions, there will likely be isolated areas of the County where demand will exceed local area water rights prior to 2030, and the extension of transmission lines to connect to other areas having surplus water rights would be cost-prohibitive.

The availability of water supplies beyond those represented by the existing water rights will depend on the ability of water purveyors to obtain new water rights (see **Section 9.3**), develop additional supplies, and build integrated water delivery infrastructure. Future population growth and related water use patterns are also controlling factors. As described in **Section 7**, the 2030 water demand forecast incorporates continued conservation and considers additional industrial demands. Increases in demand may vary from these projections, based upon timing of population growth, effectiveness of conservation, and extent of industrial development.

9.3 Issues Surrounding Future Water Rights

Supply vs. Demand: based on comparison of existing water rights and future demands, water rights are sufficient to meet demands beyond 2030.

9.3.1 Obtaining New Water Rights

WAC 246-290-130 requires that no new, previously unapproved sources or modification of existing sources be approved by the Department of Health (DOH) for use as a public water supply without a water right permit from Ecology. The purpose of this requirement is to ensure that public water systems are not created or expanded without having an adequate and reliable source of supply. In the past, DOH has given approval to water system projects that were conditional upon obtaining a water right permit from Ecology. However, in many cases, projects that had received conditional approval proceeded to construction before Ecology processed the water right. This practice resulted in a number of existing systems without adequate water rights.

[1] Based upon summary water right information presented in Exhibit 8-1. This may not include all water rights for Group A systems with a capacity of greater than 50 connections, since not all rights listed in Ecology's database are able to be correlated to specific water systems and response from individual systems was not complete.

In November 2003, DOH established a new approach for drinking water planning documents, incorporating elements of **The Municipal Water Law (MWL),** passed by the 2003 Legislature. Included in this "interim"[2] approach is a requirement that a system capacity determination must be made in a water system plan, which considers annual and instantaneous water right limitations, based upon an analysis of connections, population, or equivalent residential units. Water system plan approvals will be conditioned if necessary to limit expansion if water right quantities are determined to be a limiting factor for the system.

Current processing time for new water right permits is in excess of forty years. Legislative restrictions on Ecology staffing, recent court decisions, and changes in Ecology policy have greatly complicated this process. Because of legislation passed in 2001 and 2003, changes to existing water rights may be processed in a separate track from new permits and many changes to public water supply rights are no longer required. In addition, a new procedure implemented by the state legislature provides for a cost reimbursement process where applicants for Department of Ecology permits may pay for outside consultants to accomplish the bulk of permit evaluation and writing and thus avoid the delays associated with waiting for Ecology to process a permit. These provisions may speed up the new water right applications process.

Ground water withdrawals have been linked to impacts on stream flow. Because most streams in Kitsap County either are closed to further withdrawal or have set minimum in-stream flows, applications for ground water rights are affected. Future ground water rights will most likely require stream flow mitigation action for any projected impairment they may have on streams. The listing of certain salmon species on the endangered species list could further complicate the development of future water supplies. When individual water purveyors use the margins they currently have in inchoate water rights and conservation programs have maximized water savings, moratoriums on new connections will result unless the water right processing situation is resolved or alternative sources are developed. Predictions on the availability of future supplies under the current circumstances are not reliable.

Several additional factors about future water supply must be considered:

(1) Under the growth management act, it is necessary to identify, with reasonable certainty, water sources to accommodate planned future growth, particularly in the urban growth areas.

(2) The supply scenarios identified later in this section, primarily rely on groundwater development.

(3) For practical purposes, there are essentially no remaining surface waters in Kitsap County available for development of firm public water supplies (see **Chapter 173-515 WAC**).

[2] Revised DOH guidelines regarding elements of water system planning addressed in The MWL are to be in place by the end of 2005. Until that time, the "interim" approach developed by DOH will serve as a guide to these elements of drinking water planning.

(4) Even if ample groundwater is proven to be physically available in Kitsap County to satisfy the projected long-term public water supply needs, the backlog in processing water rights and uncertainty of Ecology's policy on hydraulic continuity and mitigation for impairment of instream flows, makes the availability of such groundwater for new appropriation uncertain.

(5) Alternative sources, such as reuse and desalinization, are currently significantly more expensive than groundwater to develop (see **Exhibit 9-2**).

9.3.2 Water Supply Reservation Procedures

The Water Resources Act of 1971, **Chapter 90.54 RCW**, sets forth the fundamentals of the State's water resource policies. The policies are designed to protect and fully utilize the waters to the greatest benefit of the people of the State of Washington. This Act directed Ecology to develop and implement a water resources program that provides a process for making decisions on future water resource allocations and use. Pursuant to this Act, Ecology adopted **Chapter 173-590 WAC**, outlining procedures for the reservation of water for future public water supply.

It is apparent that the efficient development of groundwater resources is the preferred alternative for meeting future supply requirements. The current uncertainty regarding the criteria and policies regarding hydraulic continuity between surface water and groundwater supplies, as well as other factors, may render obtaining permission to use new groundwater for future needs, difficult or impossible. To conform to the Growth Management Act (GMA) and plan for future facilities to meet projected population demands in Kitsap County, a stable water resource management strategy is critically needed.

Data required for a "Petition for Reservation of Public Waters" was originally prepared and included in the Draft for the 1992 CWSP. Ecology reviewed the draft reservation petition data but noted that public water supply reservations are defined as allocations in the Water Resources Act of 1972, **Chapter 90.54 RCW**. Therefore, under the Chelan Agreement, allocations of water can only be accomplished through a regional water resources management plan.

The Basin Planning Act in 1997 (**SB 2514**) prescribed that water resource management and planning be conducted on a Water Resource Inventory Area (WRIA) or multi-WRIA basis (**Chapter 90.82 RCW**). In 1999, Kitsap County initiated the Basin Planning Process, which is expected to take several years. In 2003, the legislature enacted modifications that require more detailed evaluations and provisions for future supplies for all needs. At this time, sufficient information has not been developed to obtain approval of a water supply reservation. However, as the Basin Planning Process develops, an evaluation of the advisability of initiating water supply reservations should be conducted.

9.4 Regional Water Supply Strategy

Given the population growth projected for the county, it is reasonable to assume that, over time, an integrated regional water supply system will be necessary. The recommended regional water supply strategy outlined here is based upon a tiered approach, with a range of activities planned for implementation, beginning with options involving lower costs and/or greater ease of implementation, followed by more expensive and complex activities that may be required to address long-term needs. A brief discussion of each tier is provided below.

Tier 1: Local Development of new Ground Water Sources by Individual Water Systems.

New ground water supplies are dependent on obtaining new water rights, which can involve extensive delays or the significant expense of resorting to Ecology's Cost Reimbursement Water Right Evaluation process. In either case, the results are not certain. As **Exhibits 9-2 and 9-3** show, however, new ground water wells are very cost effective compared to other water sources. In some cases, additional water can be made available by redeveloping existing wells or by drilling replacement wells. In many situations, replacement wells can be sited or modified to gain significant environmental benefit (e.g., deeper or farther distance from a stream or as a replacement for springs).

Tier 2: Conservation

Continued application of effective water conservation and water system efficiency measures will be a basic component of meeting future water needs. The efforts of WATERPAK, an organization of the larger water purveyors, to decrease per capita water demand, has and in the future, will extend the time that existing water supplies are sufficient to meet demands. As noted in **Section 7**, this continuing water conservation effort will be modified based on requirements developed by DOH in response to conservation mandates set by the 2003 legislature in **The Municipal Water Law**. It should be noted that while basic conservation measures are very cost effective, eventually it will be necessary to resort to programs that have costs similar to Tier 5 and above sources (see **Exhibit 9-3**).

Tiered Supply Strategy:
- **Tier 1:** New Ground Water Supplies
- **Tier 2:** Conservation
- **Tier 3:** Interties (Limited Adjustments)
- **Tier 4:** Interties: (Substantial Adjustment)
- **Tier 5:** Regional Supply / Network
- **Tier 6:** Reuse
- **Tier 7:** Desalination

Tier 3: Interties Between Adjacent Utilities Requiring Limited Adjustments

In some situations, it may be possible for neighboring water systems to share and optimize their water sources. In pursuing this activity, it is logical to begin with considering new interties amongst adjacent utilities where limited hydraulic adjustments

would be necessary. Such situations would be characterized as systems with reservoirs having similar overflow elevations and distribution systems having similar operating pressures.

Tier 4: Interties Between Adjacent Utilities Requiring More Substantial Adjustments

Once resource sharing is optimized in cases where implementation is not complex, opportunities should be investigated for interties where additional hydraulic modifications may be necessary. This may include the installation of pressure reducing valves and additional pumping facilities in situations where operating pressures between neighboring systems are incompatible.

Tier 5: Regional Source, Storage, and Transmission Network

A long-term regional strategy that has been under consideration for many years is the development of new regional ground water supplies, with a storage and transmission network to convey water throughout the County. A number of previous studies have examined the feasibility of utilizing surface waters from rivers on the Olympic Peninsula for public water supply. Water right applications were filed with the State by the City of Bremerton in 1957 for development of the Hamma Hamma River. Kitsap PUD filed for water rights on the Duckabush River in 1964. These applications were both denied by the Department of Ecology (Ecology) in 1999, and no appeals were made.

The approach to regional water supply has changed since the 1992 CWSP, when surface water sources outside of the County were seen as the best supply alternative. Now, based upon the complications surrounding the use of surface water and the recent water right application experiences of Bremerton and KPUD, new ground water supplies are viewed as more feasible than new surface water supplies. Such ground water sources would likely be developed in the Seabeck aquifer or other aquifers in the western and southwestern portions of the County.

Water from such supplies would be pumped into a regional transmission and storage network. The transmission network developed and modeled in the 1992 CWSP is still a valid approach in the context of this strategy. The analysis conducted for the 1992 CWSP indicated that water from a regional source can be delivered throughout the County using existing pipeline facilities in combination with new interties and regional reservoirs **(Appendix F provides excerpts from the 1992 CWSP as a reference to this current document)**. Although some portions of the existing transmission grid in the County may be adequate to support a regional system, other areas may require modifications such as increasing pipe sizes, installing pumping stations, and adding new reservoirs and additional valving. Due to the diverse topography of the County, boosting of regional supplies by some individual water systems will likely be required to maintain desired system operating pressures.

The general flow of water within the envisioned regional transmission system would be north and south through the lower elevations found in the Bremerton area, with new

regional pump stations and reservoirs as required to convey water throughout the County. **Exhibit 9-4** provides a schematic of a potential regional transmission system, including existing transmission piping greater than 10 inches in diameter, generally based upon the work conducted during development of the 1992 CWSP. Actual details of a future transmission system would have to be worked out by the various water systems that choose to participate in component projects.

The regional transmission system takes advantage of existing pipelines as well as adding new lines to the system. At least three new regional booster stations are anticipated as a part of the regional transmission network. One station would likely be located in the Silverdale area to boost water to the northern portion of the County. Another would likely be located in North Bremerton to improve the ability to move water from south to north on the east side of Dyes Inlet. The third regional station would be used to boost water to Port Orchard.

If the regional supply strategy is to include water supply to the Gig Harbor area in Pierce County to address potential source deficiencies, a fourth booster station would be required to boost water from near Port Orchard to the vicinity of the Tacoma Narrows Airport. A new transmission line, approximately 29 miles long, would also be required to convey water from Port Orchard to the airport area.

At least six future regional storage reservoirs will be required to provide storage on a regional basis. Various overflow elevations are envisioned for these reservoirs, such that each one would feed distinct systems in various pressure zones throughout the region. Installation of pressure reducing valves at certain transmission line interties would allow for flow of water between pressure zones, aiding in the ability of the system to accommodate regional storage requirements.

This regional transmission network was analyzed in detail via computer modeling during development of the 1992 CWSP. The results documented in that effort are still considered valid and should be used to guide implementation of this regional water supply strategy.

Tier 6: Water Reuse

Water reuse is a means by which to reduce demands upon potable water supplies, as reclaimed wastewater or stormwater may be used for certain non-potable applications. Common non-potable applications of reclaimed water include land application (irrigation), commercial/industrial process and cooling water, wetland enhancement, and stream augmentation. There also exists the potential for indirect applications of such water to enhance the availability of potable water. Most often, this takes the form of aquifer recharge, either through surface percolation or direct injection.

Due to its limited history, especially in the northwest, there are still many challenges associated with water reuse. Regulations pertaining to water quality and reliability are strict, in order to ensure public health and to protect the environment. Technologies are

improving at a rapid pace to provide economical treatment solutions to address these regulations. Perhaps the single most challenging issue surrounding reuse is public perception. Public acceptance of this type of water supply, given its controversial past, is crucial to successful implementation of a reclamation project. To accomplish this, the public needs to be informed and involved early in the process.

There appears to be potential for water reuse in the County. **Appendix J** evaluates this potential for reusing wastewater and stormwater generated in the County for various applications. The discussion focuses mainly on large-scale water reuse projects in Kitsap County which could yield significant reductions in water demand. Small scale or water reuse at an individual household level and industrial water reuse and recycling opportunities in the County are not addressed but could be pursued in the future. An evaluation of desalination is also presented in **Appendix J**. The focus of the appendix is to explore reuse and desalination opportunities that could be used by water systems in the County to extend the availability of ground water supplies.

Tier 7: Desalination

Desalination is another potential alternative water supply, by which seawater could be used for potable or non-potable applications. Cost and impracticability has discouraged the development of desalination in the past. However, with limited new supplies and increasing demand, desalination is now being pursued in certain areas of the country where other water supplies sources are not adequate. Large projects are underway in Florida and Southern California. **Appendix J** contains a more detailed review of desalination.

Costs associated with desalination vary depending on salinity, injection temperatures, recovery rates, power costs, and economy of size. The more salt that is in the water the more processing that is required and the higher the costs. Desalting seawater costs three to five times more than desalting brackish ground water. Energy costs can represent 50 to 75 percent of the desalination operating cost. In general, the colder the water being processed, the higher the energy costs. Reverse osmosis requires the least energy, which makes the process desirable for areas with limited energy resources and as energy cost in general increase. Economies of size are also important determinates in project costs. The membrane filtration process is the least dependant on economies of size.

Additional costs are associated with environmental protection. The disposal of brine, which is the output of the desalination process, has a negative effect on the environment and must be disposed of properly. Marine impacts and ground water salinity are issues associated with brine disposal which must be avoided. Associated plant modifications and mitigation measures incur additional costs.

9.5 Summary of Future Water Supply Costs

The regional water supply strategy presented in **Section 9.4** is comprised of levels, or tiers, of activities arranged in order of increasing cost and implementation complexity. Tier 1 costs for

new ground water wells are generally attractive when compared to other sources, but associated problems may dictate choosing a more expensive solution. In general, costs associated with Tier 2 and 3 activities (i.e., conservation and interties requiring limited adjustments) are anticipated to be small compared to activities in the higher tiers.

Initial conservation measures are generally very cost effective, and therefore assigned a high tier level (Tier 2). Costs for conservation programs typically include inexpensive water efficient hardware given free to customers (i.e. showerheads), customer rebates for more expensive water efficient hardware (i.e. toilets), labor costs for audits, marketing costs, and utility staff time. Collectively, these costs are far less than the capital improvements required of most other supply strategies. The cost effectiveness of conservation programs generally decreases over time since the most cost effective measures are implemented first, leaving lesser cost effective measures to be implemented later (see **Exhibit 9-3**). While WATERPAK has been active in conservation since 1993, most of the effort has been in public information and education, leaving much opportunity for cost effective conservation.

Exhibit 9-3 provides a range of cost effectiveness for various types of more expensive conservation approaches, based on conservation programs in other communities. These figures are included to provide a planning level estimate of cost effectiveness. Actual cost effectiveness in Kitsap County will vary because the details (i.e. costs and participation rate) built into these numbers may not be entirely comparable to Kitsap County. For example, costs may be different such as the dollar amount of a rebate or staff salaries. Similarly, the participation rate which is dependent on a variety of factors including housing stock age, percentage of customers with in-ground irrigation systems, program saturation rate, and program penetration rate, may be different.

Costs are not expected to be substantial for Tier 3 activities, as these would involve limited operational changes and minor capital improvements (e.g., valve modifications or replacement, short main extensions, etc) to optimize sharing of existing source and storage facilities.

Higher levels of cost will be associated with activities in Tiers 4 through 7. Tier 4 interties between adjacent utilities will require more significant system adjustments such as longer extensions of mains; installation of pressure reducing valves, booster pumping stations, and new storage; and source enhancement, as compared to simpler Tier 3 interties. In some cases, associated costs may be similar to the cost of developing and moving water from a new ground water supply (Tier 5).

In order to understand the potential cost implications of the future water supply options presented as Tiers 5, 6, and 7 (regional ground water source, reuse, and desalination), a summary of supply costs has been developed. **Table 9-1** provides the capital and annual operating and maintenance costs for three forms of water supply: new ground water development (i.e., a new well), reuse facilities at an existing wastewater treatment plant, and a desalination facility. The costs reflect only source of supply, and do not include storage, transmission, and distribution components. For the purpose of comparison, each option is considered to provide 1.0 MGD of water supply.

Further analysis was performed to determine the cost of supplying approximately ten percent of the additional water needs for the County for the next 20 years, employing each of these three sources of supply. Based upon the demand forecast presented in Section 7, average day demand is expected to increase by 11.12 MGD between 2000 and 2020. One MGD represents approximately ten percent of this demand increase. The cost of supplying this amount of water over 20 years is calculated as the capital cost for installation of 1.0 MGD facilities, plus 20 years of operations and maintenance costs, as shown in **Table 9-1**. **Exhibit 9-2** provides a graphical presentation of the costs.

Table 9-1
Comparison of Alternative Water Supply Costs (1)

	New Ground Water Well (5)	Wastewater Treatment Plant Upgrade for Class A Reuse Water (6),(7)	Desalination Facility (6), (8)
Capital Cost (2)	$590,0000	$2,000,000	$10,000,000
Annual O&M (3)	$50,000	$150,000	$500,000
20-Year Total Cost (4)	$1,590,000	$5,000,000	$20,000,000

Footnotes:
(1) Costs reflect the provision of 1.0 mgd of water supply. All costs are in 2003 dollars.
(2) Capital costs include costs for source of supply only.
(3) Annual operations and maintenance (O&M) costs include labor, maintenance, and chemical costs where applicable.
(4) Calculated as capital cost plus 20 years of the annual O&M cost.
(5) Capital cost based upon the following criteria:
  a) 800 ft deep well, at a cost of approximately $300 per foot
  b) 150 hp pump at a cost of $125,000
  c) Miscellaneous electrical, mechanical, and wellhouse costs of $225,000
  d) No treatment facilities required
(6) See Appendix J for basis of cost.
(7) In addition to source of supply costs, there are typically significant costs associated with the distribution of reuse water.
(8) Energy costs can represent 50 to 75 percent of desalination operating costs. In general, higher energy costs are associated with colder water being processed.

The 20-year cost of obtaining water from a new 1.0 MGD well is estimated at $1.6 million, compared to $5.0 and $20.0 million for reuse and desalination facilities, respectively. Due to its much higher cost, in both capital construction and annual operation, desalination is unlikely to be a viable alternative for meeting substantial supply requirements for the County in the next 20 years. Reuse, however, may prove a more attractive and feasible water supply alternative in the near future if willing and interested customers are identified, and if reclaimed water suppliers and users are committed to promoting the environmental and sustainability ethic embodied by reuse. As technology advances, the costs for both reuse and desalination should decrease, making them more attractive as alternatives in future years.

9.6 Ground Water Supply Assessment

Extensive work has been accomplished in assessing the ground water supply in Kitsap County. **Exhibit 9-5** is a list of studies, assessments, and efforts that have been completed since 1994 and may be referenced to evaluate the potential for ground water development in various sections of the County.

KPUD initiated a county wide monitoring program in response to the **Kitsap County Ground Water Management Plan (GWMP, 1991)**. Over thirteen years of aquifer level, precipitation, and stream flow data has been collected and analyzed by the program. A more complete explanation of the monitoring program activities are provided in **Appendix K**.

In conjunction with the **Kitsap County Initial Basin Assessment (Ecology Open File 97-04)** published October 1997, an Open file of Water Resource Information was initiated with copies being maintained at the Department of Ecology's North West Regional Office and at Kitsap Public Utility District Headquarters in Poulsbo WA. As new documents are developed, they are added to the files.

Exhibit 9-1
Comparison of Projected Kitsap County Average Day Demand and Existing Annual Water Rights

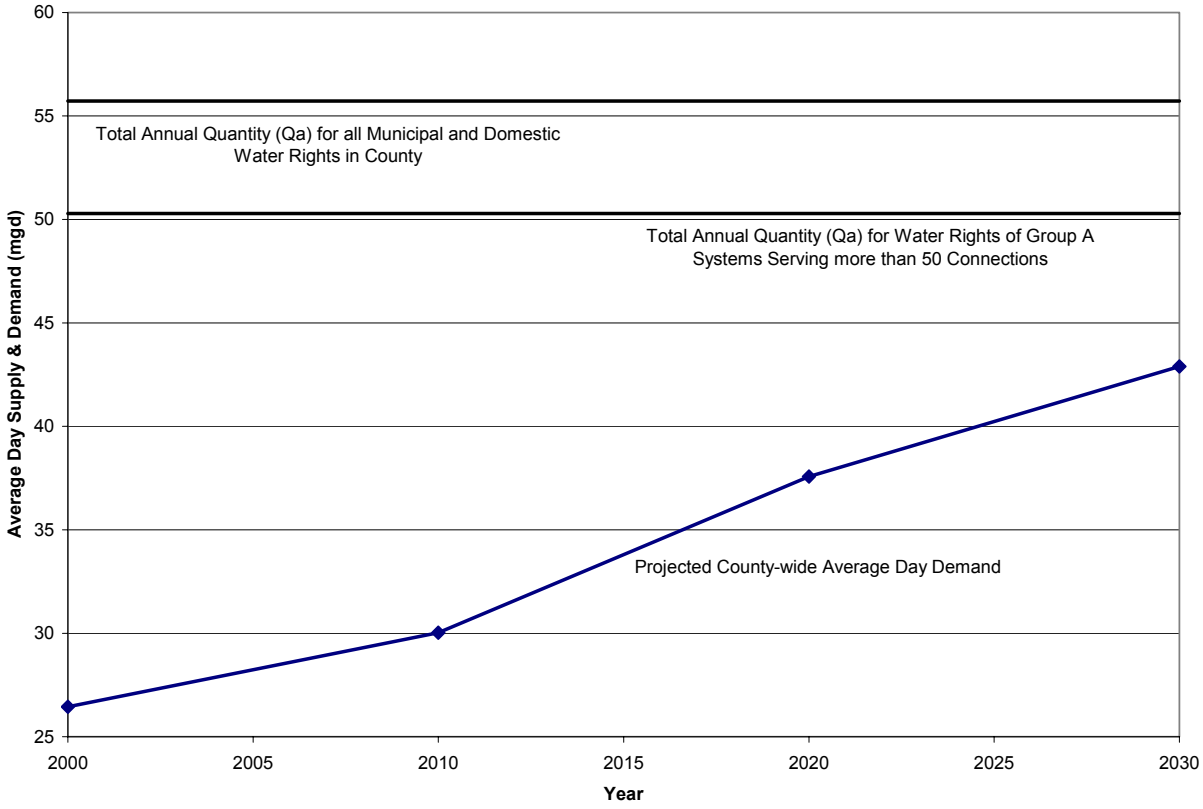


Exhibit 9-2

Comparison of Alternative Water Supply Costs - Total 20-year Costs

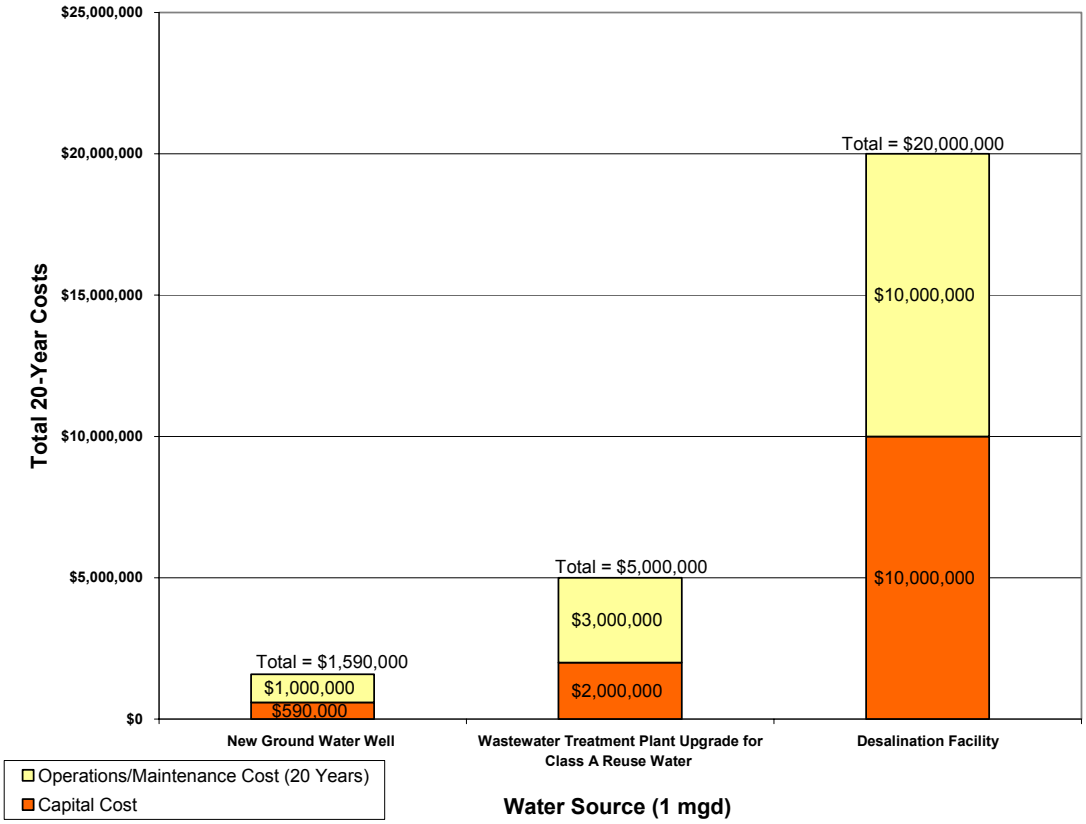


Exhibit 9-3A
Comparison of Conservation Program Costs

*	Customer Sector	Examples of measures	Savings (mgd)	Cost	Cost per 1 mgd
1	Residential Domestic	Toilet, faucet, and showerhead retrofits; efficient clothes washers	8.5	$22,000,000	$2,588,235
1	Residential Landscape	Irrigation systems and scheduling efficiencies; natural lawns and gardens	3.4	$14,000,000	$4,117,647
1	Commercial Process	Air cooling; process water and cooling tower efficiencies; laundry wash water recycling	3.9	$14,000,000	$3,589,744
1	Commercial Domestic	Low flush toilets and urinals; waterless urinals; swimming pool & hot tub efficiencies	1.3	$2,000,000	$1,538,462
1	Commercial Landscape	Weather-based irrigation; Irrigation system and scheduling efficiencies; soil moisture sensors	0.5	$2,000,000	$4,000,000
2	Residential Domestic	Residential plumbing retrofits - showerheads \ toilets	1.0	$4,307,000	$4,307,000
2	Residential Domestic	Metering with commodity rates for all connections (associated O&M $18/yr/meter)	1.0	$6,313,000	$6,313,000
2	Residential Domestic	High-efficiency washing machine rebate program - $75	1.0	$4,200,000	$4,200,000
2	Commercial Domestic	Ultra low flush toilets - $126 per unit - Commercial, Industrial, and Institutional	1.0	$4,704,000	$4,704,000
2	Residential Domestic	Ultra low flush toilets - $126 per unit - Residential	1.0	$2,940,000	$2,940,000

Source: 1. Seattle Public Utilities -Seattle-King Co. Regional Water Conservation Program Report 2002
2. Water Use Efficiency: The Costs and Water Savings Quantified - Paul Selsky-Brown and Caldwell-Sacramento-AWWA Conference 2002

Exhibit 9-3B
Conservation Program Cost Comparison

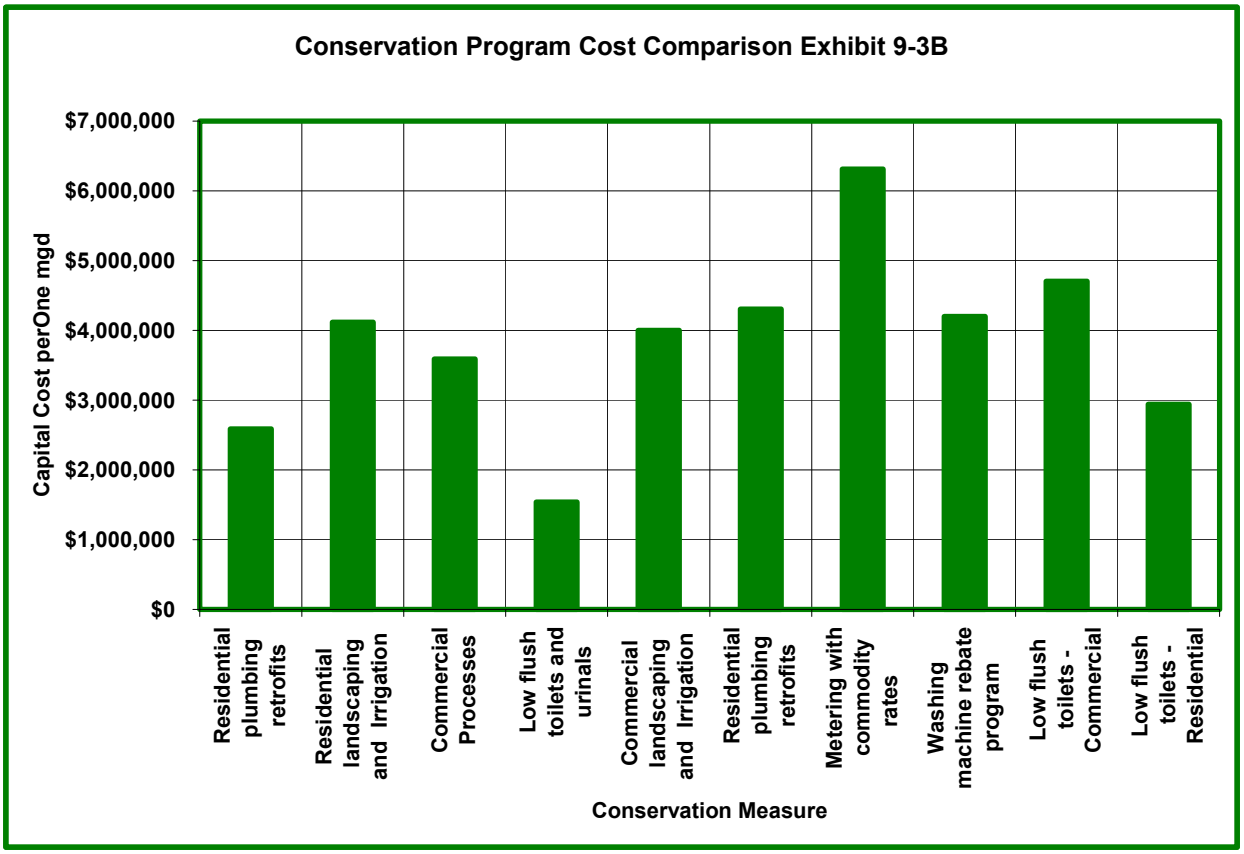


Exhibit 9-4
Regional Transmission Systems and Reservoirs

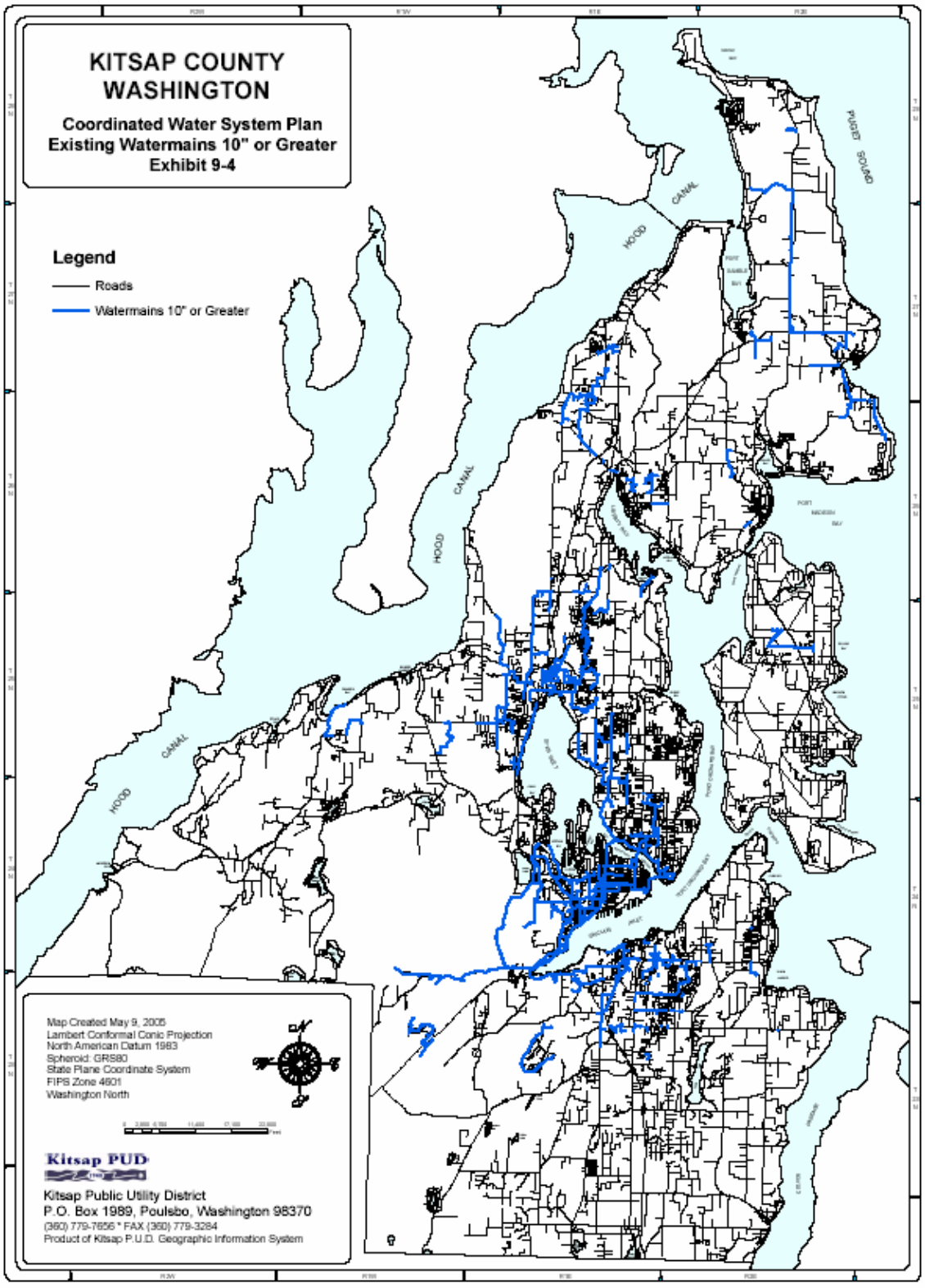


Exhibit 9-5

Ground Water Studies and Assessments Since 1984

Kitsap County Initial Basin Assessment Open File Groundwater References 1994 and Later Documents	Subarea
AGI Technologies, December 12, 1994, Source of Supply and Basin Assessment for the Annapolis Basin, a part of Water Resource Inventory Area 15, for Annapolis Water District.	Manchester
AGI Technologies, February, 1997, Source of Supply and Basin Assessment for the North Perry Water District.	Manette
AGI Technologies, July 3, 1989, Groundwater Availability Study, Port Gamble, Kitsap County, Washington. Report prepared for Pope Resources, Poulsbo, Washington.	Port Gamble
AGI Technologies, October 8, 1996, Final Report Gorst Creek Basin Study Phase I. Report prepared for City of Bremerton Public Works, Bremerton, Washington.	Gorst
Becker, J.E., (Robinson and Noble) 1995A, Hydrogeological analysis of the Bangor Aquifer System, Kitsap County, Washington.	Bangor
Becker, J.E., (Robinson and Noble) 1995B, Quantitative Flow System Analysis through Numerical Modeling Techniques of the Bangor Aquifer Systems.	Bangor
Kitsap County Ground Water Management Plan (Draft) Volumes I and II, April 1991, Volumes III, May 1997, and Volume IV, April 1996.	County-wide Reference
Purdy, J.W., (Robinson and Noble), 1995a, Hydrogeologic characterization of the Seabeck Aquifer System for PUD #1 of Kitsap County.	Seabeck
Purdy, J.W., (Robinson and Noble), 1995b, Preliminary evaluation of the water resources on the Seabeck Subarea for PUD #1 of Kitsap County.	Seabeck
Purdy, J.W., (Robinson and Noble), October 1994, Interpretation of a 60-day pumping test on PUD #1 of Kitsap County's Seabeck Well 3.	Seabeck
Robinson and Noble, Inc., Public Utility District No. 1 of Kitsap County, Economic and Engineering Services, Inc., Washington State Department of Ecology, April 1996, Seabeck Aquifer Protection Plan.	Seabeck
U.S. Geological Survey. Water-Resources Investigations Report 96-4309, 1995, Ambient Quality of Groundwater in the Vicinity of Naval Submarine Base Bangor, Kitsap County, Washington.	Bangor
Becker, J.E., (Robinson and Noble, Inc.), August 1998, Aquifer Modeling and Mitigation Options for the Seabeck Aquifer System.	Seabeck
Robinson and Noble, Inc., January 1999, Aquifer Storage and Recovery Testing in the South Kingston Aquifer, for PUD No. 1 of Kitsap County.	Kingston
Kato & Warren, Inc., Robinson & Noble, Inc., December 2000, City of Bainbridge Island Level II Assessment, An Element of the Water Resources Study	Bainbridge

Exhibit 9-5 (cont)

Ground Water Studies and Assessments Since 1984

Kitsap County Initial Basin Assessment Open File Groundwater References 1994 and Later Documents	Subarea
Robinson and Noble, Inc., April 2001, Ridgetop Production Well 90-Day Pumping Test and Monitoring Results and Analysis for Silverdale Water District.	Bangor
Robinson and Noble, Inc., March 1999, Union Subarea Initial Basin Assessment.	Union
U.S. Geological Survey. Water-Resources Investigations Report 97-4060, 1998, Hydrogeology of Naval Submarine Base Bangor and Vicinity, Kitsap County, Washington.	Bangor
U.S. Geological Survey, 2000. Water-Resources Investigations Report 01-4110, Estimating Recharge to Groundwater from Precipitation at Naval Submarine Base Bangor and Vicinity, Kitsap County, Washington,	Bangor
Prych, E. A. 1997, Numerical Simulation of Ground-Water Flow Paths and Discharge Location at Puget Sound Naval Shipyard, Bremerton, Washington. U.S. Geological Survey, Water-Resources Investigations Report 96-4147	Gorst
Brown and Caldwell, September 17, 1998, Water Reuse Feasibility Study Final Report, prepared for the City of Bremerton.	Manette
Simulation of the Ground-Water Flow System at Naval Submarine Base Bangor and Vicinity, Kitsap County, Washington, by Marijke van Heeswijk and Daniel T. Smith, U.S. Geological Survey Water-Resources Investigations Report 02-4261.	Bangor
Golder Associates Inc. 2002. Kitsap Basin (WRIA 15) Watershed Planning Phase 2, Level 1 Assessment.	County-wide Reference
Golder Associates Inc. 2002. Kitsap Watershed Planning (WRIA 15) Instream Flow Assessment Draft Step A. Redmond, Washington.	County-wide Reference
Golder Associates Inc. 2003. WRIA 15 Instream Flow Level 2 Step B Hydraulic Continuity Draft Report	County-wide Reference
Golder Associates Inc. 2003. Kitsap Watershed Planning (WRIA 15) Storage Assessment Draft Report. Redmond, Washington.	County-wide Reference
Golder Associates Inc. 2003. Kitsap Watershed Planning (WRIA 15) Water Quality Draft Step A Report	County-wide Reference
Golder Associates Inc. 2003. Kitsap Watershed Planning (WRIA 15) Water Quality Assessment Final Report	County-wide Reference

Section 10 Plan Implementation

10.1 Introduction

This revised Kitsap County Coordinated Water System Plan (CWSP) Regional Supplement was prepared to implement the various provisions of the Public Water System Coordination Act, Chapter 70.116 RCW. This Section briefly outlines the approval process for the CWSP, the process for appealing CWSP procedures, and how CWSP revisions are implemented. The section also provides the environmental review for this revision.

10.2 Revision Approval Process

As outlined in Section 2, the CWSP is presented in two parts: the Regional Supplement provisions detailed in this document for the entire County, and a compilation of individual Water System Plans (WSPs) for the various public water systems that have been approved by the Kitsap County Health District (KCHD) and the Washington State Department of Health (DOH). Completed WSPs are on file with DOH and the KCHD. The previous CWSP was completed in November 1992 and approved by DOH in August 1995. At that time, individual WSPs were required to be submitted for review within one year from the date of CWSP completion, i.e., the date the CWSP was approved by DOH. Each water utility is responsible for fulfilling its water system planning requirements. The level of effort required to update individual WSPs is based upon system size, the expansion plans of the utility, and the type of system ownership. Guidelines for preparing WSPs are available from DOH Each utility should contact DOH and establish if their individual WSP requires an update.

Preparation of the revised Regional Supplement has been the responsibility of local water utilities, acting through the Water Utility Coordinating Committee (WUCC). The WUCC identified local needs and gave direction for the development of the CWSP as it related to area-wide issues. Through the efforts of the WUCC, the procedures, regional policies, and minimum standards were completed for the CWSP.

This CWSP revision and any subsequently proposed changes, including service area changes, should be submitted by the WUCC and/or KCHD to the Kitsap County Department of Community Development (KCDCD) for appropriate internal review and forwarding to the Kitsap County Commissioners for approval. County review is to ensure there are no inconsistencies with applicable comprehensive plans, or development regulations adopted under chapter **36.70A RCW**; any other applicable comprehensive plan, land use plan, or development regulation adopted by the county or a city or town; or any watershed plan approved under **chapter 90.82 RCW**, or a comprehensive watershed plan adopted under **RCW 90.54.040 (1)**, if such a watershed plan has been approved for the area involved; or shoreline master programs. The County Commissioners have 60 days upon receipt of the revised CWSP to act on the document. The alternative actions the County Commissioners may take are set forth in **WAC**

246-293-290, as shown in **Exhibit 10-1**. After County action, the revised CWSP will be submitted to DOH, which must also act upon adoption within 60 days.

Once assured that the local preparation and review procedures of the Act have been followed, DOH will be able to approve the document as a CWSP. It should be emphasized that DOH may approve portions of the CWSP found to be consistent with adopted plans and policies in effect at the time of their review. This will enable approval of the CWSP Regional Supplement and those completed individual WSPs. As specified in **Section 2**, requests for system expansion will be denied for those water utilities that have not completed their planning or service area requirements.

By reference herein, any changes requested to individual WSPs or service area boundaries prior to the next update of the CWSP can follow the administrative change procedures specified in the CWSP.

10.3 Appeals Process

The Utility Service Review Procedure (USRP) process described herein gives existing systems preference for providing retail water service to new developments. Each service must be timely and reasonable. Issues of what constitutes appropriate conditions of service may be expected to arise in the future between applicants for new water service and existing systems. For these reasons, an appeal procedure was developed and adopted by the WUCC.

The appeals process in the prior CWSP has been clarified and slightly revised in this revision. The process has been coordinated with DOH and is discussed below and illustrated in **Exhibit 10-2**.

It may be expected that either an applicant or a utility may raise issues of protest or interpretation regarding requirements of the "timely and reasonable" provision of service by a water system or other requirements of the CWSP.

As discussed in **Section 2**, the 1995 Legislature enacted **E2SSB 5448**. Sections of this bill pertain to the criteria for "timely and reasonable" service. One of the major changes in law defines "timely" service as 120 days, unless specified otherwise by local government. DOH has developed guidelines to assist local governments with this interpretation regarding what issues trigger the appeal process, when the 120-day period begins, and procedures of an appeals process.

In accordance with the DOH guidelines, only water service issues relating to new requests for retail water service are subject to appeal under the "timely and reasonable" criteria. Issues related to conformance with State Environmental Policy Act (SEPA), the Growth Management Act (GMA), any countywide regional planning policies, county and city land use plans, financing policies, and wholesale agreements are not subject to the CWSP appeals process.

10.3.1 Issues Subject to Appeal and Review

Only water service related issues are subject to appeal and review under this process. In most instances, such issues will be identified when the applicant requests the Certificate

of Water Availability Notification Form from the water utility. Issues subject to review are limited to the following:

- Interpretation and application of water utility retail service area boundaries.
- Proposed schedule for providing service.
- Conditions of service, excluding published rates and fees.
- Annexation provisions imposed as a condition of service; provided, however, existing authorities of city government are not altered by the CWSP, except where an interlocal agreement exists between a city and the County or are specifically authorized by **Chapter 70.116 RCW**.
- Design standards more stringent that the minimum design standards specified in **Section 4**.
- Lack of response by the utility.

10.3.2 Timelines and Reasonability of Service

State law requires that no purveyor shall establish a public water system within the retail service area of another purveyor that has been assigned through the CWSP process unless the local legislative authority determines that the existing purveyors are unable to provide the service in a timely and reasonable manner.

Guidance provided by DOH regarding "timely" criteria specifies that timely service is unavailable if:

- The purveyor states in writing that it is unable or unwilling to provide service; or
- Within 120 days, the purveyor and applicant are unable to negotiate an agreement on the schedule and terms of providing service.

The applicant is required to make a good faith effort to contact the designated purveyor and initiate negotiations for a service agreement.

The 120-day period commences at the first meeting between the purveyor and the applicant pursuant to the USRP process described in **Section 5**. At the conclusion of this negotiation period, agreement to the satisfaction of both parties must be reached with written confirmation. If the applicant is unsuccessful in getting the purveyor to respond and/or meet, a certified letter to the designated purveyor requesting service will serve as evidence of the start date for the 120-day negotiation period. If an appeal is generated during the 120-day negotiation period, the procedure, discussed below, will resolve the conditions of service.

The determination of whether service is timely and reasonable shall take into consideration the guidelines developed by DOH under **RCW 70.116.060(3)(b**) and the guidelines in Chapter 3. If a determination is made the existing purveyor will not provide that service in a timely and reasonable manner, a new public water system may be constructed in accordance with the construction standards and specifications of this

CWSP. The service area boundaries for the affected purveyors will be revised to reflect the "Appeals" decision.

10.3.3 Step 1 Review - Appeal Review Subcommittee

The applicant and utility should exhaust all local utility appeals procedures before pursuing the CWSP Appeals Process. If an applicant and a utility are unable to agree on conditions of service, either party may make a written request for review of the issues to the KCHD. The KCHD will initiate review by sending a copy of the request to the Chairperson of the WUCC. The WUCC will establish a process for review and informal resolution of appeals. The process will generally function within the following framework:

If an applicant and a utility are unable to agree on conditions of service, either party may make a written request for review of the issues to the KCHD.

- **Appeal Review Subcommittee:** The view of the WUCC is that the majority of such disputes can best be resolved if discussions between the parties are facilitated by persons knowledgeable as to public water system design, construction, and operation. To this end, the WUCC will form a subcommittee for purpose of peer review of appealable issues with the objective of reaching a negotiated agreement. A subcommittee of the WUCC will be appointed by the WUCC Chairperson and renewed or revised annually by the WUCC.

  Membership will consist of designated utility representatives from each of the following areas (see **Exhibit 7-1**).

  - North Kitsap County
  - Central Kitsap County
  - South Kitsap County
  - Bainbridge Island

  The subcommittee representative from the region where an appeal exists will be allowed to participate in the discussion and evaluation of the issue, but will not be eligible to vote in any final decisions. A majority of the three remaining subcommittee members will be used to make all final decisions. In the event a subcommittee member is absent, that member is responsible for finding an alternate utility representative from the region to fill the position.

- **Objectives:** The review process will be directed to achieving the following objectives:

  - Provide a forum for negotiation of the issues between the parties.
  - Facilitate the negotiations.
  - Ensure equitable representation between parties.
  - Reach agreement between parties.
  - Where parties choose not to participate in the negotiations, identify and evaluate the facts associated with the issues.

- **Subcommittee Report:** The Subcommittee will conclude its review within 45 days of receipt of the appeal by KCHD. The Subcommittee Chairperson will provide a written report to the KCHD that contains the majority view and recommendation of the voting eligible Subcommittee members. When an appeal has been resolved, the conditions of agreement will be reported. KCHD will ensure new service area maps and agreements are generated and signed by the appropriate parties if applicable. Where resolution between the parties was not achieved, the report should identify the controlling issues and the position of the parties. Parties who disagree with the decision of the subcommittee must submit their appeal in writing within 30 days of receipt of the committee report to KCHD for forwarding to the County Commissioners along with the Subcommittee recommendation for disposition of the issues. If the recommendation of the Subcommittee is not appealed within the timeframe specified, its recommendation will be implemented by KCHD.

10.3.4 Step 2 Review - County Commissioners Appeal

Upon receipt of an appeal of the report of findings and recommendations by the Subcommittee, KCHD will forward the appeal to the County Commissioners for resolution.

10.3.5 Step 3 Review - Review Court

An appeal of a decision rendered by the Board of County Commissioners may be made to Superior Court and/or other appropriate Courts.

10.3.6 KCHD Action

The KCHD will file the subcommittee report and all appeal decision records as part of the applicant's request record.

10.3.7 Appeal Process Review

Refinement or re-direction of the process may be needed. For this reason, the WUCC may conduct an annual review of the appeals process. Based upon this review, adjustments should be made within the framework of the described appeal process. Major changes will require CWSP amendments.

Each water utility is responsible for fulfilling its water system planning requirements. DOH may require changes to individual WSPs if needed for consistency with this CWSP revision.

10.4 Water System Plan Review and Approval

The **Public Water System Coordination Act** and DOH implementing regulations (**Chapter 246-293 WAC**) require that each water purveyor within the CWSP area prepare a WSP identifying the proposed program for compliance with and implementation of responsibilities defined in the CWSP (exemptions exist for certain, non-municipally owned systems in existence

as of September 21, 1977, see **WAC 246-293-230**). If deemed necessary by DOH, individual WSPs must also be updated to be consistent with revisions to the CWSP. Recognizing that a reasonable time must be allowed purveyors to respond to CWSP revisions, all purveyors should coordinate with DOH to determine if their WSP needs to be updated, and an appropriate schedule to do so.

By statute, DOH is responsible for WSP approval KCHD provides support to DOH for systems with 25 or fewer services. **Exhibit 2-6** (presented earlier) illustrates the procedure described above for review and approval of water system plans.

10.5 Data Management Program

Data management is a necessary element of a comprehensive water resources program. Water resource data in many forms are involved in the majority of management and planning programs in Kitsap County. Watersheds and aquifers often cross jurisdictional boundaries. Many of the water resources of the County are not precisely and/or accurately characterized. Access to some existing data is limited.

A successful water resource data management program in Kitsap County needs to focus on the following goals:

- Inter-Agency data coordination;
- Water resource data integrity;
- Dedicated staff and analysis systems; and,
- Ongoing data and system development and maintenance.

This discussion characterizes those agencies and programs specific to water supply, water resource management in Kitsap County, outlines current data collection programs, and recommends action items for improving data management. The WRIA 15 Watershed Planning process likely will address other water resource management issues and data coordination.

10.5.1 Related County Programs

Organizations in Kitsap County have several ongoing water resource-related monitoring programs. These programs have varying levels of coordination and supporting data systems that are, in some cases, manual. **Exhibit 10-3** outlines water resource related programs existing within Kitsap County, including responsible agencies, and key data elements.

The data management program prescribes which agency is responsible for certain data.

10.5.2 Water Resource Management Program

The information provided in **Exhibit 10-3** was used to develop a data resource management program for ongoing, water resource data collection in Kitsap County. The program is outlined in **Appendix K**. The data management program prescribes which

agency is responsible for certain data. The evolving, distributed GIS system supported by the county, cities, and special purpose districts will be a primary repository of the data. A common base/parcel map is a key component for an inter-agency management program.

10.5.3 Recommended Actions

Based on the existing management programs in Kitsap County, and the data management program outlined above, a list of recommended actions has been developed. These recommendations are categorized by water resource management program goals, and are shown in **Exhibit 10-4**.

10.6 State and County Administrative Action

Implementation of this Plan will require administrative action at both the State and County level. New legislation enacted by the State Legislature must be phased into CWSP plan implementation. Program areas where new or amended laws, regulations, and/or ordinances may be necessary are as follows:

10.6.1 State Authority

The passage of **The Municipal Water Law** (**2E2SHB 1338** in the 2003 Legislature significantly broadened the definition of municipal water suppliers and the utilization of water rights. The Departments of Health and Ecology will influence implementation of this landmark bill. Their decisions regarding the process for water right applications, place of use service areas, conservation requirements, reporting requirements, and future planning criteria will be major considerations for all water purveyors.

10.7 Coordinated Water System Plan Update

The CWSP no longer requires an update every five years. Rather, periodic updates may be initiated by the WUCC or as required at the direction of the County Commissioners or DOH. In accordance with **Chapter 70.116.060(8) RCW**, if DOH initiates an update or revision of the CWSP, the State shall pay for the cost of updating or revising the Plan.

The WUCC should continue as a standing committee and meet at least annually to review issues of regional significance and to review implementation issues regarding the CWSP.

10.8 Periodic Committee Review

The WUCC should continue as a standing committee and meet at least annually to review issues of regional significance and to review implementation issues regarding the CWSP. A subcommittee should be established within the WUCC with responsibility to meet at least annually to review the effectiveness of the Minimum Design Standards and recommend needed changes.

10.9 Environmental Document

The **State Environmental Policy Act (SEPA) of 1971**, **Chapter 43.21C RCW**, requires that all WSPs be accompanied by an appropriate environmental document. An Environmental Checklist has been prepared for the Kitsap County CWSP Revision and its recommended activities. This Checklist is included as **Exhibit 10-5**.

The CWSP Regional Supplement has been prepared to establish administrative, management, and policy procedures to respond to the needs of existing and future water customers in Kitsap County. It is intended to address regional concerns within the County, which are not ordinarily included in each utility's WSP. Examples of those regional issues are: potential shared facilities, regional sources of supply, procedures for reviewing and approving future water use activities, minimum design standards, designated water utility service areas, and water utility management policies.

The CWSP Regional Supplement's contents are referenced in the SEPA Checklist. It is anticipated that both negative and positive impacts may occur to earth, water, land use, population, public services, and utilities because of implementing the individual WSPs. The CWSP Regional Supplement Revision has been developed in accordance with Kitsap County Area Comprehensive Plans, Sub-Area Plans, and city land use documents to reflect local land use policies and requirements. Therefore, implementation of this Plan and the employment of sound engineering and construction practices during the implementation of each utility's WSP will minimize any adverse impacts.

The CWSP is consistent with the Kitsap County Planning Policy for Coordinated and Consistent Planning between the County and the Cities within Urban Growth Areas.

Exhibit 10-1
State Regulation Relating to Local Review of Plan

WAC 246-293-290 COORDINATED WATER SYSTEM PLAN - LOCAL REVIEW.

(1) Prior to submission of a coordinated water system plan to the department for approval, the plan shall be reviewed by the county legislative authority(ies) in the county(ies) in which the critical water supply service area is located. County review of the coordinated water system plan shall include at least one public hearing.

(2) If no comments have been received from the county legislative authority(ies) within 60 days of receipt of the coordinated water system plan, the department may consider the plan for approval.

(3) If within 60 days of receipt of the coordinated water system plan, the county legislative authority(ies) find any segment of the plan to be inconsistent with adopted land use plans, shorelines master programs, the following shall occur:

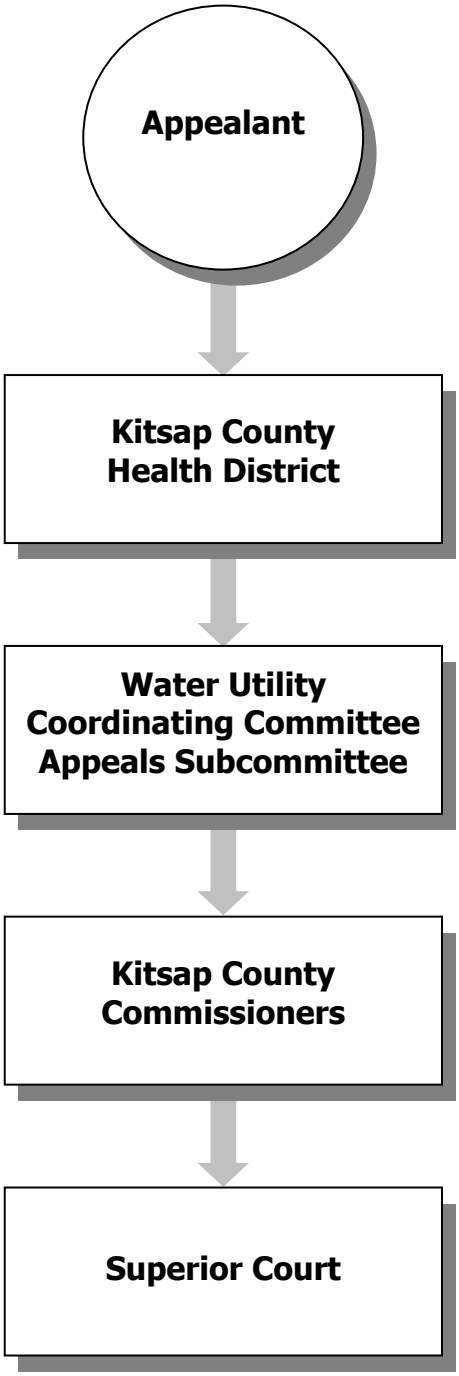
(a) The county legislative authority(ies) shall submit written description of their determination and justification supporting their determination prior to the end of the 60 day period to the department and all affected parties.

(b) The county legislative authority(ies) shall make every effort to resolve any inconsistencies within 60 days of submittal of written justification.

(c) The department may approve those portions of the coordinated water system plan found not to be inconsistent with adopted plans and policies at any time after the initial determination by the county legislative authority(ies).

(d) If after the 60-day period established for resolution of inconsistencies an inconsistency still exists, the affected parties shall each present their final recommended alternative solution to the department. The department shall then review all alternative solutions and discuss its recommendations with the county(ies) and the water utility coordinating committee. If after two years of the declaration of the critical water supply service area the inconsistencies persist, the department may deny proposals to establish or to expand any public water system facilities, which affect that portion of the critical water supply service area being contested.

Exhibit 10-2
Appeals Process



The Appeals Subcommittee is composed of designated water utility representatives from the North, Central, South, and Bainbridge Island sections of the County. Membership is renewed or revised annually. A majority vote determines Subcommittee recommendations made concerning appeals.

Exhibit 10-3
Water Resource Related Programs, Implementing Agencies, and Associated Data

Agency	Programs	Data Available	Actions/Data Needed	Notes
		Local		
WATERPAK, KCHD	Conservation	Water Use\ERU Water Loss		Membership in Puget Sound Conservation Coalition
WATERPAK	Backflow Prevention			Western WA Cross Connection Control Professionals Group
WATERPAK	Emergency Response			
WATERPAK, Cities	Education & Public Information			
County (DCD), Cities	Comprehensive Planning	Water quality, land use, population.		WRIA 15 Watershed Planning Process
County (Natural Resources)	Water Shed Planning	Stream Data		
County (Public Works), Cities	NPDES compliance	WWTPs, Storm water quality		
County (Public Works), Cities	Storm Water Management			KCSSWMP
KCHD	Drinking water Quality	Water quality and water use for public water systems	Immediate compliance and inventory data (SDWA)	
KCHD	Compliance w/State regs.	Well logs Unique Well ID #		Data Bank of wells being developed (KPUD)
KCHD	Water systems/well sites			
KCHD	Monitoring	Landfill ground and surface water monitoring		
KPUD	Monitoring	Salt water intrusion		
KPUD	Source development			
KPUD	Computer mapping			
KPUD	Monitoring Program	Groundwater levels		MOUs w/KCHD
		Precipitation		
		Stream flow		Contract with County & MOU w/Suquamish Tribe to share streamflow data

Exhibit 10-3 (cont)

Agency	Programs	Data Available	Actions/Data Needed	Notes
		Local (cont)		
		Seawater intrusion		
KPUD	Well Database	Unique Well ID #		Assist KCHD Program
Water Districts	Source development			
Cities	Source development			
		State		
DOH	Drinking water	Water quality for public systems		Health District - MOU - for water use and demand
DOH	Salt water intrusion		Water quality and quantity correlated to location and physical characteristics	Committee w/Ecology, well drillers, KPUD, local Health Department
DOH	Water Conservation			
Ecology	Well logs	Well capacity and construction	Groundwater quality data	MOU DOH
Ecology	Water rights		Develop Water Production Database	
Ecology	Water usage		Demand forecasts	
		Federal		
EPA	Drinking Water Quality (SDWA)	Surface and groundwater quality		STORET
USGS	Hydrogeological Studies	Groundwater capacity and quality		WATSTORE
USGS	Well Data	Well inventory		NWIS
		Tribes		
Suquamish	Source monitoring	Stream flow and well capacity		
Point-No-Point Treaty		Stream flow data		

Exhibit 10-4

Recommended Action Items for Water Resource Program Development

Goal: Inter-Agency Data Coordination	
Recommend Action	**Implementing Agency**
Establish Memoranda of Understanding for Water Resource Data Development	KPUD
Develop a Common Base Map	County
Utilize Water Quality Data Formats employed by the EPA STORET Database	County (P W – SSWMP)
Utilize Wetland Data Formats employed by National Wetland Inventory	County (DCD - Water Resources)
Maintain Stream and Water Data Compatibility with DNR's Stream Type Maps and the State Classification System Defined by WAC 222-16-030	County (DCD - Water Resources)
Maintain Compatibility with Ecology's Data Reporting Requirements for Well Logs and Construction Information	KCHD
Maintain Compatibility with DOH's Water System Reporting Requirements	All

Goal: Water Resource Data Integrity	
Recommended Action	**Implementing Agency**
Develop a Ground Control Network for the County	County (PW)
Develop 1/2 meter or better imagery	County (DCD)
Develop a GPS Reference Station Network for Kitsap County in cooperation with existing regional efforts	County (PW) / KPUD
Determine Well Locations for Existing Well Logs Utilizing the County Base Map/GPS	KCHD/KPUD
Develop Surface Water Monitoring Network Utilizing County Base Map	County (PW – SSWMP)
Develop Ground-Controlled Parcel Map	County (DCD-GIS/IT)
Collect Digital Water Use and Water Level Data from the Purveyors	KCHD / KPUD
Continue Unique Well Identification Number Program	KCHD /KPUD
Identify Watershed Boundaries Using 1:100 Scale Orthophoto-Derived Contours	County (P W – SSWMP)
Update Comprehensive Resource Data Using Remote Sensing (I.e., Spot or Thematic Mapper Satellite data)	County (DCD) / KPUD

Goal: Dedicated Staff and Analysis Systems	
Recommended Action	**Implementing Agency**
Develop a Countywide GIS that Allows Interactive Water Resource Data Access and Analysis	County (DCD) / KPUD
Assign Ownership and Maintenance Responsibilities Among Agencies to Maintain Data Layers/Databases	Each Agency
Train Staff as Needed	Each Agency

Goal: Ongoing Data And System Development	
Recommended Action	**Implementing Agency**
Maintain Active Membership on Key Players Committee	Each Agency
Develop Data and System Development Cost Sharing Program	Each Agency

Exhibit 10-5
Environmental Checklist

WAC 197-11-960 Environmental checklist.

ENVIRONMENTAL CHECKLIST

Purpose of checklist:

The State Environmental Policy Act (SEPA), chapter 43.21C RCW, requires all governmental agencies to consider the environmental impacts of a proposal before making decisions. An environmental impact statement (EIS) must be prepared for all proposals with probable significant adverse impacts on the quality of the environment. The purpose of this checklist is to provide information to help you and the agency identify impacts from your proposal (and to reduce or avoid impacts from the proposal, if it can be done) and to help the agency decide whether an EIS is required.

Instructions for applicants:

This environmental checklist asks you to describe some basic information about your proposal. Governmental agencies use this checklist to determine whether the environmental impacts of your proposal are significant, requiring preparation of an EIS. Answer the questions briefly, with the most precise information known, or give the best description you can.

You must answer each question accurately and carefully, to the best of your knowledge. In most cases, you should be able to answer the questions from your own observations or project plans without the need to hire experts. If you really do not know the answer, or if a question does not apply to your proposal, write "do not know" or "does not apply." Complete answers to the questions now may avoid unnecessary delays later.

Some questions ask about governmental regulations, such as zoning, shoreline, and landmark designations. Answer these questions if you can. If you have problems, the governmental agencies can assist you.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Use of checklist for nonproject proposals:

Complete this checklist for nonproject proposals, even though questions may be answered "does not apply." IN ADDITION, complete the SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS (part D).

For nonproject actions, the references in the checklist to the words "project," "applicant," and "property or site" should be read as "proposal," "proposer," and "affected geographic area," respectively.

Exhibit 10-5 (cont)
Environmental Checklist

TO BE COMPLETED BY APPLICANT

EVALUATION FOR
AGENCY USE ONLY

A. BACKGROUND

1. Name of proposed project, if applicable:

Kitsap County Coordinated Water System Plan Regional Supplement – 2004 Revision

2. Name of applicant: **Kitsap Public Utility District No. 1**

3. Address and phone number of applicant and contact person:

Bill Hahn, Kitsap PUD No. 1
P.O Box 1989
Poulsbo, WA 98370
(360) 779-7656

4. Date checklist prepared: **December 2, 2004**

5. Agency requesting checklist: **Washington State Department of Health**

6. Proposed timing or schedule (including phasing, if applicable):

Approval of Plan in 2005 with periodic updates at the direction of the Kitsap County Board of Commissioners or the Department of Health.

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

As individual water system plans are updated, they are required to be consistent with this Plan.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

None other than what is contained in the Plan.

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.
N/A

10. List any government approvals or permits that will be needed for your proposal, if known.

A. Kitsap County Department of Community Development will review for consistency with applicable local plans.

Exhibit 10-5 (cont)
Environmental Checklist

TO BE COMPLETED BY APPLICANT

EVALUATION FOR AGENCY USE ONLY

B. Plan will be forwarded to Kitsap County Board of Commissioners for approval.

C. Upon Commission approval, forwarded on to DOH for approval.

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)

The 2004 revision to the Kitsap County Coordinated Water System Plan Regional Supplement revises the 1992 plan, and is a detailed local and state management program developed pursuant to Chapter 70.116 RCW and Chapter 246-293 WAC. This plan provides a process and strategy for Kitsap County water utilities to define their role in a program consistent with adopted land use policies and projected growth strategy of the area.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

Study area provided in the plan.

B. ENVIRONMENTAL ELEMENTS

1. **Earth**

a. General description of the site (circle one): Flat, rolling, hilly, steep slopes, mountainous, other . . . . . .

Not Applicable

b. What is the steepest slope on the site (approximate percent slope)?

Not Applicable

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any prime farmland.

Not Applicable

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

Not Applicable

Exhibit 10-5 (cont)
Environmental Checklist

TO BE COMPLETED BY APPLICANT

EVALUATION FOR
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e. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill.

Not Applicable

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

Not Applicable

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

Not Applicable

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:

Not Applicable

2. Air

a. What types of emissions to the air would result from the proposal (i.e., dust, automobile, odors, industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known.

Not Applicable

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

Not Applicable

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

Not Applicable

3. **Water**

a. Surface:

1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

Not Applicable

2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.

Not Applicable

Exhibit 10-5 (cont)
Environmental Checklist

TO BE COMPLETED BY APPLICANT

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3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected.
Indicate the source of fill material.

Not Applicable

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.

Not Applicable

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

Not Applicable

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

Not Applicable

b. Ground:

1) Will ground water be withdrawn, or will water be discharged to ground water? Give general description, purpose, and approximate quantities if known.

Not Applicable

2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals. . . ; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

Not Applicable

c. Water runoff (including stormwater):

1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow?
Will this water flow into other waters? If so, describe.

Not Applicable

2) Could waste materials enter ground or surface waters? If so, generally describe.

Not Applicable

Exhibit 10-5 (cont)
Environmental Checklist

TO BE COMPLETED BY APPLICANT

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d. Proposed measures to reduce or control surface, ground, and runoff water impacts, if any:

Not Applicable

4. **Plants**

a. Check or circle types of vegetation found on the site: **Not Applicable**

—— deciduous tree: alder, maple, aspen, other
—— evergreen tree: fir, cedar, pine, other
—— shrubs
—— grass
—— pasture
—— crop or grain
—— wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other
—— water plants: water lily, eelgrass, milfoil, other
—— other types of vegetation

b. What kind and amount of vegetation will be removed or altered?

Not Applicable

c. List threatened or endangered species known to be on or near the site.

Not Applicable

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

Not Applicable

5. **Animals**

a. Circle any birds and animals which have been observed on or near the site or are known to be on or near the site:

Not Applicable

birds: hawk, heron, eagle, songbirds, other:
mammals: deer, bear, elk, beaver, other:
fish: bass, salmon, trout, herring, shellfish, other:

Exhibit 10-5 (cont)
Environmental Checklist

TO BE COMPLETED BY APPLICANT

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b. List any threatened or endangered species known to be on or near the site.

Not Applicable

c. Is the site part of a migration route? If so, explain.

Not Applicable

d. Proposed measures to preserve or enhance wildlife, if any:
Not Applicable

6. **Energy and natural resources**

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

Not Applicable

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.
Not Applicable

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

Not Applicable

7. **Environmental health**

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.

Not Applicable

1) Describe special emergency services that might be required.

Not Applicable

2) Proposed measures to reduce or control environmental health hazards, if any:

Not Applicable

b. **Noise**

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

Not Applicable

Exhibit 10-5 (cont)
Environmental Checklist

TO BE COMPLETED BY APPLICANT

EVALUATION FOR AGENCY USE ONLY

2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.

Not Applicable

3) Proposed measures to reduce or control noise impacts, if any:

Not Applicable

8. **Land and shoreline use**

a. What is the current use of the site and adjacent properties?

There are multiple uses throughout Kitsap County.

b. Has the site been used for agriculture? If so, describe.

Agriculture use generally exists in rural areas.

c. Describe any structures on the site.

All types

d. Will any structures be demolished? If so, what?

Not Applicable

e. What is the current zoning classification of the site?

Varies since Coordinated Water System Plan is a county-wide plan.

f. What is the current comprehensive plan designation of the site?

Varies since Coordinated Water System Plan is a county-wide plan.

g. If applicable, what is the current shoreline master program designation of the site?

Varies

h. Has any part of the site been classified as an "environmentally sensitive" area? If so, specify.

Not Applicable

i. Approximately how many people would reside or work in the completed project?

Not Applicable

Exhibit 10-5 (cont)
Environmental Checklist

TO BE COMPLETED BY APPLICANT

EVALUATION FOR AGENCY USE ONLY

j. Approximately how many people would the completed project displace?

Not Applicable

k. Proposed measures to avoid or reduce displacement impacts, if any:

Not Applicable

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

Plan will be reviewed by Kitsap County Department of Community Development to ensure consistency with applicable comprehensive plans, land use plans, and development regulations.

9. **Housing**

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

Not Applicable

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

Not Applicable

c. Proposed measures to reduce or control housing impacts, if any:

Not Applicable

10. **Aesthetics**

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

Not Applicable

b. What views in the immediate vicinity would be altered or obstructed?

Not Applicable

c. Proposed measures to reduce or control aesthetic impacts, if any:

Not Applicable

Exhibit 10-5 (cont)
Environmental Checklist

TO BE COMPLETED BY APPLICANT

EVALUATION FOR
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11. **Light and glare**

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

Not Applicable

b. Could light or glare from the finished project be a safety hazard or interfere with views?

Not Applicable

c. What existing off-site sources of light or glare may affect your proposal?

Not Applicable

d. Proposed measures to reduce or control light and glare impacts, if any:

Not Applicable

12. **Recreation**

a. What designated and informal recreational opportunities are in the immediate vicinity?

Not Applicable

b. Would the proposed project displace any existing recreational uses? If so, describe.

Not Applicable

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

Not Applicable

13. **Historic and cultural preservation**

a. Are there any places or objects listed on, or proposed for, national, state, or local preservation registers known to be on or next to the site? If so, generally describe.

Not Applicable

b. Generally describe any landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the site.

Not Applicable

Exhibit 10-5 (cont)
Environmental Checklist

TO BE COMPLETED BY APPLICANT

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c. Proposed measures to reduce or control impacts, if any:

Not Applicable

14. **Transportation**

a. Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any.

Not Applicable

b. Is site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?

Not Applicable

c. How many parking spaces would the completed project have? How many would the project eliminate?

Not Applicable

d. Will the proposal require any new roads or streets, or improvements to existing roads or streets, not including driveways? If so, generally describe (indicate whether public or private).

Not Applicable

e. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

Not Applicable

f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.

Not Applicable

g. Proposed measures to reduce or control transportation impacts, if any:

Not Applicable

Exhibit 10-5 (cont)
Environmental Checklist

TO BE COMPLETED BY APPLICANT

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15. **Public services**

a. Would the project result in an increased need for public services (for example: fire protection, police protection, health care, schools, other)? If so, generally describe.

Not Applicable

b. Proposed measures to reduce or control direct impacts on public services, if any.

Not Applicable

16. **Utilities**

a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other.

This is a plan. Not Applicable

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

This is a plan. Not Applicable

C. SIGNATURE

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature:

Date Submitted:

Exhibit 10-5 (cont)
Environmental Checklist

TO BE COMPLETED BY APPLICANT

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D. SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS

(do not use this sheet for project actions)

Because these questions are very general, it may be helpful to read them in conjunction with the list of the elements of the environment.

When answering these questions, be aware of the extent the proposal or the types of activities likely to result from the proposal, would affect the item at a greater intensity or at a faster rate than if the proposal were not implemented. Respond briefly and in general terms.

1. How would the proposal be likely to increase discharge to water; emissions to air; production, storage, or release of toxic or hazardous substances; or production of noise?

The Plan provides a framework for the water supply needs of Kitsap County while achieving coordination between water service and the Growth Management Act. The Plan provides a process and strategy for water utilities in Kitsap County, defining their role in a program consistent with adopted land use polices and projected growth strategy of an area.

Proposed measures to avoid or reduce such increases are:

None – as a part of this plan

2. How would the proposal be likely to affect plants, animals, fish, or marine life?

The plan has no effect on these resources. Implementation of parts of the plan may have some affect. Such actions would require an individual environmental review.

Proposed measures to protect or conserve plants, animals, fish, or marine life are:

None

3. How would the proposal be likely to deplete energy or natural resources?

The plan has no effect on these resources. Implementation of parts of the plan may have some affect. Such actions would require an individual environmental review.

Exhibit 10-5 (cont)
Environmental Checklist

TO BE COMPLETED BY APPLICANT

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Proposed measures to protect or conserve energy and natural resources are:

Implementation of a joint utility based regional water conservation plan is in progress. The Coordinated Water System Plan states that conservation programs are being included in the preparation or update of individual water system plans.

4. How would the proposal be likely to use or affect environmentally sensitive areas or areas designated (or eligible or under study) for governmental protection; such as parks, wilderness, wild and scenic rivers, threatened or endangered species habitat, historic or cultural sites, wetlands, floodplains, or prime farmlands?

All elements of the Coordinated Water System Plan will go through a review by the Kitsap County Department of Community Development to ensure applicability with local land use plans or development regulations. In addition, specific actions proposed for implementation under the Coordinated Water System Plan are subject to environmental review.

Proposed measures to protect such resources or to avoid or reduce impacts are:

None

5. How would the proposal be likely to affect land and shoreline use, including whether it would allow or encourage land or shoreline uses incompatible with existing plans?

All elements of the Coordinated Water System Plan will go through a review by the Kitsap County Department of Community Development to ensure applicability with local land use plans or development regulations. In addition, specific actions proposed for implementation under the Coordinated Water System Plan are subject to environmental review.

Proposed measures to avoid or reduce shoreline and land use impacts are:

See answer directly above.

6. How would the proposal be likely to increase demands on transportation or public services and utilities?

The Coordinated Water System Plan will be consistent with local land use plans, comprehensive plans, development regulations, and approved watershed plans. The plan will provide clarity concerning water services to specific areas.

Exhibit 10-5 (cont)
Environmental Checklist

TO BE COMPLETED BY APPLICANT

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Proposed measures to reduce or respond to such demand(s) are:

None

7. Identify, if possible, whether the proposal may conflict with local, state, or federal laws or requirements for the protection of the environment.

No conflict is expected as Plan will be reviewed and/or approved by the appropriate local and state agencies.

Appendix A Content Requirements for Water System Plans

Content Description	*Must Be Submitted(X)
Chapter 1 Description of Water System	
■ Ownership and Management	X
■ System Background	X
■ Inventory of Existing facilities	X
■ Related Plans (e.g., CWSP)	X
■ Existing and Future Service Area and Characteristics	
• Agreement	
• Map	X
■ Service Area Policies (including SMA policy and conditions of service)	
Chapter 2 Basic Planning Data	
■ Current: Population, Number of service Connections, and ERUs	X
■ Current Water Use and Data Reporting	X
■ Current and Future Land Use	X
■ Future: Population Number of Service Connections and ERUs (6 and 20 years)	X
■ Future Water Use (Demand forecast for 6 and 20 years	X
Chapter 3 System Analysis	
■ System Design Standards	X
■ Water Quality Analysis	X
■ System Description and Analysis	X
• Source	X
• Treatment	
• Storage	X
• Distribution System/Hydraulics	X
■ Summary of System Deficiencies	X
■ Analysis of Possible Improvement Projects	X
Chapter 4 Conservation Program and Source of Supply Analysis	
■ Conservation Program	X
■ Water Right Evaluation	X
■ Source of Supply Analysis	
■ Water Supply Reliability Analysis with Water Shortage Response Plan	X
■ Interties	

Content Description		*Must Be Submitted (X)
Chapter 5	Source Water Protection (Check One or Both)	
	■ Wellhead Protection Program	
	■ Watershed Control Program	
Chapter 6	Operation and Maintenance Program	
	■ Water System Management and Personnel	X
	■ Operator Certification	X
	■ Routine Operating Procedures, Preventive Maintenance and Record Keeping	X
	■ Water Quality Sampling Procedures (Comprehensive Monitoring Plan	X
	■ Coliform Monitoring Plan	X
	■ Emergency Response Program	X
	■ Safety Procedures	X
	■ Cross-connection Control Program	X
	■ Customer Complaint Response Program	
	■ Summary of O&M Deficiencies	X
Chapter 7	Distribution Facilities Design and Construction Standards	
	■ Standard Construction Specification for Distribution Mains	
	■ Design and Construction Standards for distribution Related Projects, including internal	
	■ Engineering Review Procedures (i.e., Alternative Review)	
Chapter 8	Improvement Program	
	■ Selection and Justification of Proposed Capital Improvements Projects	
	■ Selection and Justification of Non-Capital Projects	
	■ Improvement Schedule (6 and 20 years)	X
Chapter 9	Financial Program	
	■ Identification of Cost of Capital and Non-Capital Improvements	X
	■ Identification of Annual O&M Expenses	X
	■ Six-Year Balanced Operating Budget	X
	■ Discussion of Water Rates Including Proposed Increases and Rate Structures	X
	■ Financial Viability Test (for systems serving less than 1000)	
	■ UTC Financial Viability and Feasibility Test (for UTC regulated systems)	
Chapter 10	Miscellaneous Documents	
	■ County/Adjacent Utility Correspondence	X
	■ State Environmental Policy Act (SEPA) Determination	
	■ Agreements	
	■ Satellite Management Program	

**At the pre plan conference, a formal determination will be made on what must be submitted.*

Appendix

B Individual Water System Plans

Individual Water System Plans are on file with the Kitsap County Health District. The attached Table provides the status of plans for the larger water systems in the County.

System Name	Date of Current Water System Plan	Notes
Annapolis Water District	7/8/99	Next WSP 7/8/2005
Apex Water Supply		No plan on file, 130 connections
Bainbridge Island, City of	6/25/97	WSP was due 6/25/2003, plan in process
Bear Cub Water Association		No plan on file, 55 connections
Bethel East	1/29/03	SWSMP approved, no updated needed
Bill Point Water		No plan on file, 84 connections
Bremerton, City of	12/13/00	Next WSP due 12/13/06
Bucklin Water System	2/27/95	Next WSP was due 2/27/01 and is in process. Recently purchased by Washington Water Service.
Cedar Glen M/H Park		No WSP on file, 135 connections
Emerald Heights Water		No WSP on file, 77 connections.
Erland Point Water Co	12/15/00	Next WSP due 12/15/06.
Fragaria Landing	9/24/98	Next WSP due 9/25/04.
Frog Pond Waters Inc	11/20/97	Next WSP was due 11/20/03.
Glenwood Station		No WSP on file, 59 connections. Owned by Washington Water Service.
Holly Water		No WSP on file, 75 connections.
Island Lake Water Co	5/11/97	WSP was due 5/22/03.
Island Utilities	04/07/98	WSP was due 5/11/2003.
Kitsap West M/H Park		No WSP on file, 96 connections.
Kitsap Public Utility District	11/15/02	Next WSP 11/15/2008. Covers all systems except North Bainbridge (04/16/99)
Manchester Water District	05/07/99	Next WSP due 5/7/05, in process.
Mainland View Manor	05/01/98	Next - Washington Water Service Plan
Martell Mobile Manor		No WSP on file, 29 connections
McCormick Woods	3/31/03	Next WSP due 3/31/09.
Meadowmeer Water Service	3/2/99	Next WSP due 3/2/05
Naval Undersea Warfare Center		WSP submitted, but not approved due to lack of PE stamp. 128 connections
North Perry Ave Water Dist	12/10/01	Next WSP due 12/10.07
Northwest Water Systems		SMA #119, current.
Olympic View Mobile Manor	None	Managed by PLC.
Peninsula Light Company	03/01/02	SMA Update. Water System Umbrella Plan being prepared.
Pine Lake MH Estates 4	01/01/03	Managed by PLC. SWSMP prepared by PLC.
Pine Lake M/H Est 1-3		No WSP on file, 72 connections.
Port Madison Water Co.		No WSP on file, 99 connections.
Port Orchard, City of	9/7/96	WSP was due on 9/7/02.
Poulsbo, City of	5/11/01	WSP due on 5/11/07.
Priddy Vista		No WSP on file, 88 connections.
Puget Sound Naval Shipyard	1/31/96	WSP was due on 1/31/02
Rocky Point Water District	12/9/93	WSP was due on 12/9/99.

System Name	Date of Current Water System Plan	Notes
Sandy Hook Community	4/28/99	WSP due on 4/28/2005.
Silverdale Water District	10/12/92	WSP was due on 10/12/98, in process.
S'kllalam Upper		No WSP on file.
S'kllalam Lower		No WSP on file.
South Bainbridge Water	6/10/99	WSP due 6/10/05.
SUBASE Bangor		No WSP on file.
Sunnyslope Water District	6/24/98	WSP due on 6/24/2004.
Surfcrest Park Water Co.		No WSP on file
Tahuyeh Lake Community Club	5/18/00	WSP due 5/18/06.
Viewside Community Water		No WSP on file, 48 connections.
WA Water Services	05/01/98	WSP Umbrella Plan submitted and is in process of review by DOH.

Appendix C Signed Service Area Agreement with Related Maps and ARC-INFO Disks

On File with Kitsap County Health District

Appendix D Water System Workbook for New, Expanding, and Existing Group B Water Systems

On File with Kitsap County Health District.

Appendix

E Population and Water Demand Forecast Tables

Per Capita - Table 1

Year 2000 Kitsap County Water Demand Projections for Inside and Outside the UGA

	Population	Percentage		Populati6on		Water Demand		
FAZ	Total [1]	Inside UGA[2]	Outside UGA[2]	Inside UGA	Outside UGA	Inside UGA (@133 *gpcpd*[3])	Outside UGA (@ 88 *gpcpd*[4])	Total
North Kitsap							**Subarea Total**	**2,409,130**
9019	13,371	0%	100%	0	13,371	0	1,176,648	1,176,648
9020	12,706	20%	80%	2,541	10,165	337,980	894,502	1,232,482
Bainbridge Island							**Subarea Total**	**2,700,964**
9913	5,409	100%	0%	5,409	0	719,397	0	719,397
9914	14,899	100%	0%	14,899	0	1,981,567	0	1,981,567
Central Kitsap							**Subarea Total**	**14,473,157**
9005	4,613	20%	80%	923	3,690	122,706	324,755	447,461
9006	8,738	0%	100%	0	8,738	0	768,944	768,944
9009	4,260	0%	100%	0	4,260	0	374,880	374,880
9011	7,168	100%	0%	7,168	0	953,344	0	953,344
9017	3,157	40%	60%	1,263	1,894	167,952	166,690	334,642
9018	14,500	90%	10%	13,050	1,450	1,735,650	127,600	1,863,250
9900	6,759	100%	0%	6,759	0	898,947	0	898,947
9901	7,173	80%	20%	5,738	1,435	763,207	126,245	889,452
9902	23,306	100%	0%	23,306	0	3,099,698	0	3,099,698
9904	9,789	95%	5%	9,300	489	1,236,840	43,072	1,279,912
9908	7,253	0%	100%	0	7,253	0	638,264	638,264
9909	4,275	0%	100%	0	4,275	0	376,200	376,200
9915	13,941	0%	100%	0	13,941	0	1,226,808	1,226,808
9916	9,935	100%	0%	9,935	0	1,321,355	0	1,321,355
South Kitsap							**Subarea Total**	**6,636,686**
9002	22,799	75%	25%	17,099	5,700	2,274,200	501,578	2,775,778
9004	14,559	80%	20%	11,647	2,912	1,549,078	256,238	1,805,316
9015	12,822	0%	100%	0	12,822	0	1,128,336	1,128,336
9016	10,537	0%	100%	0	10,537	0	927,256	927,256
Total	**231,969**	**ND**	**ND**	**129,037**	**102,932**	**17,161,921**	**9,058,016**	**26,219,937**

Footnotes:

(1) From PSRC Kitsap County forecast including year 2000 census data.

(2) Where UGA boundaries do not correspond with FAZ boundaries the percentage of households inside the UGA was estimated based on TAZ level PSRC forecasts and input from Kitsap County staff.

(3) Calculated using water system data from four representative water system inside the UGA.

(4) Calculated using water system data from six representative water systems outside the UGA.

Per Capita - Table 2

Year 2010 Kitsap County Water Demand Projections for Inside and Outside the UGA

	Population	Percentage		Population		Water Demand		
FAZ	Total [1]	Inside UGA[2]	Outside UGA[2]	Inside UGA	Outside UGA	Inside UGA (@133 *gpcpd*[3])	Outside UGA *(@ 88 gpcpd*[4]*)*	Total
North Kitsap							**Subarea Total**	**2,550,510**
9019	14,400	0%	100%	0	14,400	0	1,267,200	1,267,200
9020	13,230	20%	80%	2,646	10,584	351,918	931,392	1,283,310
Bainbridge Island							**Subarea Total**	**3,039,183**
9913	5,584	100%	0%	5,584	0	742,672	0	742,672
9914	17,267	100%	0%	17,267	0	2,296,511	0	2,296,511
Central Kitsap							**Subarea Total**	**17,572,527**
9005	7,016	20%	80%	1,403	5,613	186,626	493,926	680,552
9006	9,864	0%	100%	0	9,864	0	868,032	868,032
9009	4,695	0%	100%	0	4,695	0	413,160	413,160
9011	9,177	100%	0%	9,177	0	1,220,541	0	1,220,541
9017	3,837	40%	60%	1,535	2,302	204,128	202,594	406,722
9018	17,627	90%	10%	15,864	1,763	2,109,952	155,118	2,265,070
9900	7,836	100%	0%	7,836	0	1,042,188	0	1,042,188
9901	7,476	80%	20%	5,981	1,495	795,446	131,578	927,024
9902	31,008	100%	0%	31,008	0	4,124,064	0	4,124,064
9904	11,565	95%	5%	10,987	578	1,461,238	50,886	1,512,124
9908	8,303	0%	100%	0	8,303	0	730,664	730,664
9909	4,853	0%	100%	0	4,853	0	427,064	427,064
9915	17,129	0%	100%	0	17,129	0	1,507,352	1,507,352
9916	10,887	100%	0%	10,887	0	1,447,971	0	1,447,971
South Kitsap							**Subarea Total**	**7,152,569**
9002	23,182	75%	25%	17,387	5,796	2,312,405	510,004	2,822,409
9004	15,066	80%	20%	12,053	3,013	1,603,022	265,162	1,868,184
9015	16,953	0%	100%	0	16,953	0	1,491,864	1,491,864
9016	11,024	0%	100%	0	11,024	0	970,112	970,112
Total	**267,979**	**NA**	**NA**	**149,614**	**118,365**	**19,898,682**	**10,416,107**	**30,314,789**

Footnotes:

(1) From PSRC Kitsap County forecast including year 2000 census data.

(2) Where UGA boundaries do not correspond with FAZ boundaries the percentage of households inside the UGA was estimated based on TAZ level PSRC forecasts and input from Kitsap County staff.

(3) Calculated using water system data from four representative water system inside the UGA.

(4) Calculated using water system data from six representative water systems outside the UGA.

Per Capita - Table 3

Year 2020 Kitsap County Water Demand Projections for Inside and Outside the UGA

	Population	Percentage		Population		Water Demand		
FAZ	Total [1]	Inside UGA[2]	Outside UGA[2]	Inside UGA	Outside UGA	Inside UGA (@133 *gpcpd*[3])	Outside UGA *(@ 88 gpcpd*[4]*)*	Total
North Kitsap							**Subarea Total**	**2,798,915**
9019	16,212	0%	100%	0	16,212	0	1,426,656	1,426,656
9020	14,147	20%	80%	2,829	11,318	376,310	995,949	1,372,259
Bainbridge Island							**Subarea Total**	**3,424,351**
9913	5,948	100%	0%	5,948	0	791,084	0	791,084
9914	19,799	100%	0%	19,799	0	2,633,267	0	2,633,267
Central Kitsap							**Subarea Total**	**20,800,516**
9005	10,159	20%	80%	2,032	8,127	270,229	715,194	985,423
9006	11,273	0%	100%	0	11,273	0	992,024	992,024
9009	5,240	0%	100%	0	5,240	0	461,120	461,120
9011	11,431	100%	0%	11,431	0	1,520,323	0	1,520,323
9017	4,468	40%	60%	1,787	2,681	237,698	235,910	473,608
9018	20,052	90%	10%	18,047	2,005	2,400,224	176,458	2,576,682
9900	9,012	100%	0%	9,012	0	1,198,596	0	1,198,596
9901	8,202	80%	20%	6,562	1,640	872,693	144,355	1,017,048
9902	39,233	100%	0%	39,233	0	5,217,989	0	5,217,989
9904	13,373	95%	5%	12,704	669	1,689,679	58,841	1,748,520
9908	9,077	0%	100%	0	9,077	0	798,776	798,776
9909	5,697	0%	100%	0	5,697	0	501,336	501,336
9915	19,571	0%	100%	0	19,571	0	1,722,248	1,722,248
9916	11,931	100%	0%	11,931	0	1,586,823	0	1,586,823
South Kitsap							**Subarea Total**	**8,074,525**
9002	24,636	75%	25%	18,477	6,159	2,457,441	541,992	2,999,433
9004	17,039	80%	20%	13,631	3,408	1,812,950	299,886	2,112,836
9015	21,542	0%	100%	0	21,542	0	1,895,696	1,895,696
9016	12,120	0%	100%	0	12,120	0	1,066,560	1,066,560
Total	**310,162**	**NA**	**NA**	**173,423**	**136,739**	**23,065,306**	**12,033,001**	**35,098,307**

Footnotes:

(1) From PSRC Kitsap County forecast including year 2000 census data.

(2) Where UGA boundaries do not correspond with FAZ boundaries the percentage of households inside the UGA was estimated based on TAZ level PSRC forecasts and input from Kitsap County staff.

(3) Calculated using water system data from four representative water system inside the UGA.

(4) Calculated using water system data from six representative water systems outside the UGA.

Per Capita - Table 4

Year 2030 Kitsap County Water Demand Projections for Inside and Outside the UGA

	Population	Percentage		Population		Water Demand		
FAZ	Total [1]	Inside UGA[2]	Outside UGA[2]	Inside UGA	Outside UGA	Inside UGA (@133 *gpcpd*[3])	Outside UGA (@ 88 *gpcpd*[4])	Total
North Kitsap							**Subarea Total**	**3,058,507**
9019	18,236	0%	100%	0	18,236	0	1,604,768	1,604,768
9020	14,987	20%	80%	2,997	11,990	398,654	1,055,085	1,453,739
Bainbridge Island							**Subarea Total**	**3,749,935**
9913	6,359	100%	0%	6,359	0	845,747	0	845,747
9914	21,836	100%	0%	21,836	0	2,904,188	0	2,904,188
Central Kitsap							**Subarea Total**	**23,591,767**
9005	13,488	20%	80%	2,698	10,790	358,781	949,555	1,308,336
9006	12,689	0%	100%	0	12,689	0	1,116,632	1,116,632
9009	5,707	0%	100%	0	5,707	0	502,216	502,216
9011	13,669	100%	0%	13,669	0	1,817,977	0	1,817,977
9017	4,862	40%	60%	1,945	2,917	258,658	256,714	515,372
9018	21,553	90%	10%	19,398	2,155	2,579,894	189,666	2,769,561
9900	10,084	100%	0%	10,084	0	1,341,172	0	1,341,172
9901	8,793	80%	20%	7,034	1,759	935,575	154,757	1,090,332
9902	46,781	100%	0%	46,781	0	6,221,873	0	6,221,873
9904	14,841	95%	5%	14,099	742	1,875,160	65,300	1,940,461
9908	9,539	0%	100%	0	9,539	0	839,432	839,432
9909	6,604	0%	100%	0	6,604	0	581,152	581,152
9915	21,333	0%	100%	0	21,333	0	1,877,304	1,877,304
9916	12,556	100%	0%	12,556	0	1,669,948	0	1,669,948
South Kitsap							**Subarea Total**	**8,829,254**
9002	25,594	75%	25%	19,196	6,399	2,553,002	563,068	3,116,070
9004	19,156	80%	20%	15,325	3,831	2,038,198	337,146	2,375,344
9015	24,864	0%	100%	0	24,864	0	2,188,032	2,188,032
9016	13,066	0%	100%	0	13,066	0	1,149,808	1,149,808
Total	**346,597**	**NA**	**NA**	**193,976**	**152,621**	**25,798,828**	**13,430,635**	**39,229,463**

Footnotes:

(1) From PSRC Kitsap County forecast including year 2000 census data.

(2) Where UGA boundaries do not correspond with FAZ boundaries the percentage of households inside the UGA was estimated based on TAZ level PSRC forecasts and input from Kitsap County staff.

(3) Calculated using water system data from four representative water system inside the UGA.

(4) Calculated using water system data from six representative water systems outside the UGA.

Per Household - Table 1

Year 2000 Kitsap County Water Demand Projections for Inside and Outside the UGA

	Households	Percentage		Households		Water Demand		
Subarea FAZ	Total [1]	Inside UGA[2]	Outside UGA[2]	Inside UGA	Outside UGA	Inside UGA (@356 gpHHpd[3])	Outside UGA (@237 gpHHpd[4])	Total (gpd)
North Kitsap							**Subarea Total**	**2,482,094**
9019	5,071	0%	100%	0	5,071	0	1,201,827	1,201,827
9020	4,909	20%	80%	982	3,927	349,521	930,746	1,280,267
Bainbridge Island							**Subarea Total**	**2,840,524**
9913	2,508	100%	0%	2,508	0	892,848	0	892,848
9914	5,471	100%	0%	5,471	0	1,947,676	0	1,947,676
Central Kitsap							**Subarea Total**	**14,676,680**
9005	1,668	20%	80%	334	1,334	118,762	316,253	435,014
9006	3,050	0%	100%	0	3,050	0	722,850	722,850
9009	1,588	0%	100%	0	1,588	0	376,356	376,356
9011	2,995	100%	0%	2,995	0	1,066,220	0	1,066,220
9017	1,230	40%	60%	492	738	175,152	174,906	350,058
9018	5,451	90%	10%	4,906	545	1,746,500	129,189	1,875,689
9900	2,889	100%	0%	2,889	0	1,028,484	0	1,028,484
9901	2,554	80%	20%	2,043	511	727,379	121,060	848,439
9902	9,276	100%	0%	9,276	0	3,302,256	0	3,302,256
9904	4,471	95%	5%	4,247	224	1,512,092	52,981	1,565,074
9908	1,282	0%	100%	0	1,282	0	303,834	303,834
9909	1,494	0%	100%	0	1,494	0	354,078	354,078
9915	4,992	0%	100%	0	4,992	0	1,183,104	1,183,104
9916	3,554	100%	0%	3,554	0	1,265,224	0	1,265,224
South Kitsap							**Subarea Total**	**6,455,558**
9002	8,501	75%	25%	6,376	2,125	2,269,767	503,684	2,773,451
9004	5,164	80%	20%	4,131	1,033	1,470,707	244,774	1,715,481
9015	4,651	0%	100%	0	4,651	0	1,102,287	1,102,287
9016	3,647	0%	100%	0	3,647	0	864,339	864,339
Total	**86,416**	**NA**	**NA**	**50,204**	**36,212**	**17,872,588**	**8,582,268**	**26,454,856**

Footnotes:

(1) From PSRC Kitsap County forecast including year 2000 census data. A household includes both multi-family and single-family living units. A multi-family unit is defined as one living space such as an apartment.

(2) Where UGA boundaries do not correspond with FAZ boundaries the percentage of households inside the UGA was estimated based on TAZ level PSRC forecasts and input from Kitsap County staff.

(3) Calculated using water system data from four representative water system inside the UGA.

(4) Calculated using water system data from six representative water systems outside the UGA.

Per Household - Table2

Year 2010 Kitsap County Water Demand Projections for Inside and Outside the UGA

	Households	Percentage		Households		Water Demand		
Subarea FAZ	Total [1]	Inside UGA[2]	Outside UGA[2]	Inside UGA	Outside UGA	Inside UGA (@356 gpHHpd[3])	Outside UGA (@237 gpHHpd[4])	Total (gpd)
North Kitsap							**Subarea Total**	**2,712,661**
9019	5,640	0%	100%	0	5,640	0	1,336,680	1,336,680
9020	5,276	20%	80%	1,055	4,221	375,651	1,000,330	1,375,981
Bainbridge Island							**Subarea Total**	**3,276,268**
9913	2,650	100%	0%	2,650	0	943,400	0	943,400
9914	6,553	100%	0%	6,553	0	2,332,868	0	2,332,868
Central Kitsap							**Subarea Total**	**18,540,575**
9005	2,624	20%	80%	525	2,099	186,829	497,510	684,339
9006	3,565	0%	100%	0	3,565	0	844,905	844,905
9009	1,807	0%	100%	0	1,807	0	428,259	428,259
9011	3,952	100%	0%	3,952	0	1,406,912	0	1,406,912
9017	1,543	40%	60%	617	926	219,723	219,415	439,138
9018	6,845	90%	10%	6,161	685	2,193,138	162,227	2,355,365
9900	3,440	100%	0%	3,440	0	1,224,640	0	1,224,640
9901	2,750	80%	20%	2,200	550	783,200	130,350	913,550
9902	13,001	100%	0%	13,001	0	4,628,356	0	4,628,356
9904	5,416	95%	5%	5,145	271	1,831,691	64,180	1,895,871
9908	1,542	0%	100%	0	1,542	0	365,454	365,454
9909	1,753	0%	100%	0	1,753	0	415,461	415,461
9915	6,346	0%	100%	0	6,346	0	1,504,002	1,504,002
9916	4,029	100%	0%	4,029	0	1,434,324	0	1,434,324
South Kitsap							**Subarea Total**	**7,166,532**
9002	8,848	75%	25%	6,636	2,212	2,362,416	524,244	2,886,660
9004	5,528	80%	20%	4,422	1,106	1,574,374	262,027	1,836,402
9015	6,361	0%	100%	0	6,361	0	1,507,557	1,507,557
9016	3,949	0%	100%	0	3,949	0	935,913	935,913
Total	**103,418**	**NA**	**NA**	**60,386**	**43,032**	**21,497,523**	**10,198,513**	**31,696,036**

Footnotes:

(1) From PSRC Kitsap County forecast including year 2000 census data. A household includes both multi-family and single-family living units. A multi-family unit is defined as one living space such as an apartment.

(2) Where UGA boundaries do not correspond with FAZ boundaries the percentage of households inside the UGA was estimated based on TAZ level PSRC forecasts and input from Kitsap County staff.

(3) Calculated using water system data from four representative water system inside the UGA.

(4) Calculated using water system data from six representative water systems outside the UGA.

Per Household - Table 3
Year 2020 Kitsap County Water Demand Projections for Inside and Outside the UGA

	Households	Percentage		Households		Water Demand		
Subarea FAZ	Total [1]	Inside UGA[2]	Outside UGA[2]	Inside UGA	Outside UGA	Inside UGA (@356 gpHHpd[3])	Outside UGA (@237 gpHHpd[4])	Total (gpd)
North Kitsap							**Subarea Total**	**3,052,783**
9019	6,515	0%	100%	0	6,515	0	1,544,055	1,544,055
9020	5,785	20%	80%	1,157	4,628	411,892	1,096,836	1,508,728
Bainbridge Island							**Subarea Total**	**3,768,616**
9913	2,873	100%	0%	2,873	0	1,022,788	0	1,022,788
9914	7,713	100%	0%	7,713	0	2,745,828	0	2,745,828
Central Kitsap							**Subarea Total**	**22,630,259**
9005	3,904	20%	80%	781	3,123	277,965	740,198	1,018,163
9006	4,190	0%	100%	0	4,190	0	993,030	993,030
9009	2,069	0%	100%	0	2,069	0	490,353	490,353
9011	5,039	100%	0%	5,039	0	1,793,884	0	1,793,884
9017	1,842	40%	60%	737	1,105	262,301	261,932	524,233
9018	7,984	90%	10%	7,186	798	2,558,074	189,221	2,747,294
9900	4,039	100%	0%	4,039	0	1,437,884	0	1,437,884
9901	3,098	80%	20%	2,478	620	882,310	146,845	1,029,156
9902	17,060	100%	0%	17,060	0	6,073,360	0	6,073,360
9904	6,383	95%	5%	6,064	319	2,158,731	75,639	2,234,369
9908	1,713	0%	100%	0	1,713	0	405,981	405,981
9909	2,115	0%	100%	0	2,115	0	501,255	501,255
9915	7,452	0%	100%	0	7,452	0	1,766,124	1,766,124
9916	4,537	100%	0%	4,537	0	1,615,172	0	1,615,172
South Kitsap							**Subarea Total**	**8,286,861**
9002	9,582	75%	25%	7,187	2,396	2,558,394	567,734	3,126,128
9004	6,426	80%	20%	5,141	1,285	1,830,125	304,592	2,134,717
9015	8,304	0%	100%	0	8,304	0	1,968,048	1,968,048
9016	4,464	0%	100%	0	4,464	0	1,057,968	1,057,968
Total	**123,087**	**NA**	**NA**	**71,991**	**51,096**	**25,628,707**	**12,109,811**	**37,738,518**

Footnotes:

(1) From PSRC Kitsap County forecast including year 2000 census data. A household includes both multi-family and single-family living units. A multi-family unit is defined as one living space such as an apartment.

(2) Where UGA boundaries do not correspond with FAZ boundaries the percentage of households inside the UGA was estimated based on TAZ level PSRC forecasts and input from Kitsap County staff.

(3) Calculated using water system data from four representative water system inside the UGA.

(4) Calculated using water system data from six representative water systems outside the UGA.

Per Household - Table 4

Year 2030 Kitsap County Water Demand Projections for Inside and Outside the UGA

	Households	Percentage		Households		Water Demand		
Subarea FAZ	Total [1]	Inside UGA[2]	Outside UGA[2]	Inside UGA	Outside UGA	Inside UGA (@356 gpHHpd[3])	Outside UGA (@237 gpHHpd[4])	Total (gpd)
North Kitsap							**Subarea Total**	**3,358,931**
9019	7,382	0%	100%	0	7,382	0	1,749,534	1,749,534
9020	6,171	20%	80%	1,234	4,937	439,375	1,170,022	1,609,397
Bainbridge Island							**Subarea Total**	**4,146,688**
9913	3,077	100%	0%	3,077	0	1,095,412	0	1,095,412
9914	8,571	100%	0%	8,571	0	3,051,276	0	3,051,276
Central Kitsap							**Subarea Total**	**25,943,298**
9005	5,226	20%	80%	1,045	4,181	372,091	990,850	1,362,941
9006	4,759	0%	100%	0	4,759	0	1,127,883	1,127,883
9009	2,269	0%	100%	0	2,269	0	537,753	537,753
9011	6,061	100%	0%	6,061	0	2,157,716	0	2,157,716
9017	2,018	40%	60%	807	1,211	287,363	286,960	574,323
9018	8,635	90%	10%	7,772	864	2,766,654	204,650	2,971,304
9900	4,536	100%	0%	4,536	0	1,614,816	0	1,614,816
9901	3,347	80%	20%	2,678	669	953,226	158,648	1,111,873
9902	20,615	100%	0%	20,615	0	7,338,940	0	7,338,940
9904	7,102	95%	5%	6,747	355	2,401,896	84,159	2,486,055
9908	1,765	0%	100%	0	1,765	0	418,305	418,305
9909	2,473	0%	100%	0	2,473	0	586,101	586,101
9915	8,192	0%	100%	0	8,192	0	1,941,504	1,941,504
9916	4,814	100%	0%	4,814	0	1,713,784	0	1,713,784
South Kitsap							**Subarea Total**	**9,110,388**
9002	9,960	75%	25%	7,470	2,490	2,659,320	590,130	3,249,450
9004	7,286	80%	20%	5,829	1,457	2,075,053	345,356	2,420,409
9015	9,663	0%	100%	0	9,663	0	2,290,131	2,290,131
9016	4,854	0%	100%	0	4,854	0	1,150,398	1,150,398
Total	**138,776**	**NA**	**NA**	**81,255**	**57,521**	**28,926,922**	**13,632,382**	**42,559,305**

Footnotes:

(1) From PSRC Kitsap County forecast including year 2000 census data. A household includes both multi-family and single-family living units. A multi-family unit is defined as one living space such as an apartment.

(2) Where UGA boundaries do not correspond with FAZ boundaries the percentage of households inside the UGA was estimated based on TAZ level PSRC forecasts and input from Kitsap County staff.

(3) Calculated using water system data from four representative water system inside the UGA.

(4) Calculated using water system data from six representative water systems outside the UGA.

Appendix
F Regional Infrastructure

In the event major well fields or other jointly planned water supplies are developed for use in various areas throughout the County, an effective network of transmission and distribution piping will be required. **Section 9** outlines a general backbone network of piping, storage, and booster pumping facilities, which will be needed to augment current water system mains. Details of the regional network will have to be worked out among the participating water systems and design will have to be consistent with constraints imposed by local hydraulic conditions, Department of Health guidelines, and Growth Management Act/land use policies. The recommendations in **Section 9** are based on a phased implementation strategy to meet the future demands of Kitsap County.

Tier 5 addresses a regional source, storage, and transmission network. This concept was examined in the 1992 CWSP. Cited below are excerpts from that document that were referenced in developing the strategy for the 2004 CWSP. Exhibits and tables referenced below are available in the original 1992 document.

SECTION IX – <u>REGIONAL WATER SUPPLY PLAN</u>

7. REGIONAL SUPPLY SYSTEM

A. Transmission Network

(2) Inside-of-County Regional Supply Network

A Kitsap County regional transmission network was developed and analyzed using computer modeling. Water utilities located in Kitsap County were contacted for information about their water system components. Questionnaires were sent to 32 Class 1 water suppliers. Data requested included size and location of existing and proposed storage reservoirs and water main pipelines.

The Kentucky Pipe Analysis computer program was used to analyze the regional network. The data was entered into the analysis program using an AutoCAD interface program developed by Economic and Engineering Services, Inc. (EES). Based on the information received from the water utilities, the data input to the computer program included the size, length, and location of pipelines, and location and overflow elevation of the storage reservoirs. The pipes incorporated into the model were generally existing pipes greater than 10-inch diameter. To intertie the existing facilities throughout the County, 18-inch diameter proposed pipelines were added. Additional proposed pipes were included to form a single regional transmission network. Also, proposed regional storage

reservoirs were incorporated into the transmission network. The regional network shown on Exhibit IX-7 is the combination of existing and proposed facilities used to model the regional transmission network for Kitsap County. Pressure reducing valve locations and node elevations were determined by EES and input into the model. Pressure reducing valves were used throughout the system for proposed interties between utilities in different pressure zones. The elevations of the pipe nodes were determined using U.S. Geological Survey (USGS) maps. Lastly, the demand at each node was input into the model.

The demand on the system was the year 2040 total water requirement. Since regional network storage is to be provided, a peaking factor of 1.5 times the average day demand was selected. On this basis, the total demand in the year 2040 modeled on the system was 63 MGD. The quantity and location of demands were based on regional demand projections outlined in Section VII. The demands were broken down into 5 subareas throughout the County: Hansville-Indianola, Bainbridge Island, Poulsbo-Bremerton, West Kitsap, and South Kitsap. The Poulsbo-Bremerton demand was distributed as 60 percent from Bremerton, 30 percent from Poulsbo, and 10 percent from Silverdale. The Hansville-Indianola demand was divided equally between Hansville and Indianola. Within these subareas, demands were divided equally and applied to nodes consistently spread throughout the subarea.

Results of the computer hydraulic analysis are that water can be delivered throughout Kitsap County through a regional transmission network combining existing facilities with proposed pipeline interties and regional reservoirs. Due to the diverse topography of the region and the various pressure zones, the quantity of water demanded could be delivered to each area, but the required pressure for each individual system was not always met. In cases where required pressure was not available, the individual system would have to boost the water to the desired system pressure. Pump stations are described more fully in subsection (3).

The new regional transmission network takes advantage of existing pipelines as well as adding new lines to the system. Many of the existing lines must be increased in size to meet the design criteria. In addition, a pump station and pipeline sized to deliver 20 MGD peak day flow to the Tacoma City Airport located near the Tacoma Narrows has been included in the model. The Airport line would extend from an intertie with the regional network in the vicinity of Port Orchard and be approximately 29 miles long. The transmission line was sized to meet potential source deficiencies identified for the Gig Harbor Peninsula in the 1986 Pierce County CWSP. The year 2040 average day deficiency was reported as approximately 13 MGD. A peaking factor of 1.5 was applied to arrive at the 20 MGD design flow.

The costs for replacing existing lines and installing new lines are shown on Table IX-6A. The costs for the new line to the Tacoma Airport are shown in Table IX-6B.

The transmission lines from the surface sources described above connect with the regional transmission network near Gorst. Groundwater sources are not immediately connected to the regional network. In fact, some of the proposed well locations are miles from a regional pipeline. Costs for connecting the groundwater sources with the regional network are included in Table IX-6C. This work assumes that the pumps supplied in the wells are adequate to move water from the wells to the regional system. In addition, pipe sizes have been based on maximum velocity of 5 fps. Locations for the new wells are those generally shown on Exhibit IX-2. Some effort has been made to combine flows from multiple wells in one pipeline but no effort has been made to optimize the arrangement of lines.

Booster Stations

Four new regional booster stations are required for the in-county transmission network. Their locations are shown on Exhibit IX-7 and described below. One station is located in the Silverdale area (5.5 MGD) to boost water to the north County area. Another is located in North Bremerton (5.0 MGD) to improve the ability to move water from south to north on the east side of Dyes Inlet. The third regional station (2.0 MGD) is used to boost water to Port Orchard. The fourth station (20.0 MGD) is required to transmit water from the regional network to the Tacoma Airport. Costs for the booster stations are presented in Table IX-6D and IX-6E.

B. Regional Storage Facilities

Six future storage reservoir locations and various other potential regional reservoir locations were identified in the County as shown in Exhibit IX-7. These reservoirs were identified to provide storage on a regional basis, such that water could be supplied to a tank at a certain elevation, which would then feed distinct systems in various pressure zones within the subarea. The capacity and overflow elevation of the reservoirs would accommodate regional storage requirements. In addition, the reservoirs were sited in demand subareas where groundwater may be a potential source of supply feeding directly into the regional reservoirs.

Capacities of the new regional reservoirs were set based on the demands in each of the sub-basins. Total regional storage for each sub-basin was to be equal to 200 percent of the average 2040 deficit. Combining the storage with the transmission system capacity of 150 percent of the average demand, gives each sub-basin the equivalent of 3.5 times average day (approximately peak day) supply in transmission and storage. This calculation assumes that existing storage is able to meet existing peak day demands.

Table IX-6F list the capacity and estimated cost for each regional storage facility. Should a treatment plant be constructed to treat surface water supplies from the Olympic Peninsula, additional storage will be provided. Any storage provided in conjunction with surface water development is in addition to the quantity determined in Table IX-6F and could replace some storage identified in the Gorst area.

Table IX-6G is an overall summary of all regional network costs, including pipelines, booster pumps, and storage reservoirs.

Appendix G

Kitsap County Group A Public Water Systems With a Capacity Under 50 Connections

PWS ID	System Name	Mail Address	Mail City	Mail State	Mail Zip	Well Pump	Stor	Conn App	Conn Curr	Loc	Road Address
00515F	Agate West	P.O. Box 1085	Poulsbo	WA	98370	80		47	47	NK	Laura Loop, 5497
018488	Al's Grocery	P.O. Box 15	Olalla	WA	98359			0	1	SK	Olalla Valley Road
63777P	Ashley Lane Water	P.O. Box 1989	Poulsbo	WA	98370	30		16	16	NK	Lillehammer, Off Pugh Rd.
268010	Avellana Water System	P.O. Box 1989	Poulsbo	WA	98370	63	30,000	40	39	CK	Avellana Circle
04196T	Banner Estates	8100 Banner Lane SE	Olalla	WA	98359	50	7,500	11	11	SK	Banner Lake S.E., 8100
047258	Battle Point Park	P.O. Box 10010	Bainbridge Island	WA	98110	35	75,000	0	1	BI	Arrow Point Drive
05950R	Bethel Community Water	1530 SE Rose RD	Port Orchard	WA	98367			0	14	SK	Bethel Road S.E., 6281
SP080M	Blake Island State Park	P.O. Box 277	Manchester	WA	98353	20	20,000	0	27	SK	Blake Island, 2524024
00924Q	Bloedel Reserve	7571 N.E. Dolphin	Bainbridge Island	WA	98110	12	10,000	7	7	BI	Dolphine N.E., 7571
877626	Blue Moon, The	P.O. Box 123	Port Orchard	WA	98366	12		1	1	SK	Hwy 160 S.W., 682
08176J	Brazeau Mobile Home Park	Po Box 123	Port Orchard	WA	98366	30	0	29	29	NK	State Hwy 104 N.E., 6205
06651Y	Brianwood Water	P.O. Box 1989	Poulsbo	WA	98370	38	32,000	34	19	CK	Brian Lane
061623	Briarkirk Barn	Po Box 1989	Poulsbo	WA	98370	10		2	2	SK	Sedgwick Road Sw, 369
09445P	Burley Bible Church Water	P.O. Box 10	Burley	WA	98322			7	7	SK	Olympic Drive S.E., 14687
09450C	Burley Water Assoc	P.O. Box 392	Burley	WA	98322		1,000	0	27	SK	Spruce S.E., 1259
AA266D	Calvary Chapel	Po Box 123	Port Orchard	WA	98366	25		4	1	NK	Stottlemeyer RD Ne, 23300

PWS ID	System Name	Mail Address	Mail City	Mail State	Mail Zip	Well Pump	Stor	Conn App	Conn Curr	Loc	Road Address
10838Y	Camp David	P.O. Box 1989	Poulsbo	WA	98370			40	22	CK	Camp Lane, 3570
01323H	Camp Wesley Harris	1101 Tautog Circle, Suite 313	Silverdale	WA	98315-1087			0	10	CK	Seabeck Hwy
063375	Carden Country School	Po Box 123	Port Orchard	WA	98366	9	300	1	1	BI	Island Center RD
01461M	Carousel Water System	3386 Olympiad Dr. S.E.	Port Orchard	WA	98366	9	1,000	4	3	SK	Carousel Lane, 5345
010867	Christian Worship Center	P.O. Box 210	Seabeck	WA	98380	11	2,500	3	3	CK	Holly Road N.W., 14130
12973N	Church Of Nazarene	22097 Viking Way N.W.	Poulsbo	WA	98370			0	2	NK	Viking Way, 22097
15255F	Clear Creek Baptist Church	P.O. Box 1415	Silverdale	WA	98383			0	2	CK	Clear Creek Court, 11971
47431C	Clear Creek Estates	Po Box 336	Gig Harbor	WA	98335	70		36	36	CK	Ammon Road, 20393
13522D	Clear Creek M/H Park	2958 NW Mountain View Rd, #N	Silverdale	WA	98383			0	21	CK	Mountain View N.E., 2958
32027B	Cliftonwood Water System	P.O. Box 20429	Seattle	WA	98102	13	1,000	15	11	SK	Feigley Road
00341X	Cougar Valley Elementary	P.O. Box 1989	Poulsbo	WA	98370	25	62,000	1	1	CK	Olympic View Road
070220	Country Junction Store	Po Box 123	Port Orchard	WA	98366			0	2	SK	Mile Hill Drive, 5310
006755	Country Meadows	P.O. Box 3232	Silverdale	WA	98383	25	50,000	31	31	CK	Odyssey Court N.W., 15990
474214	Crystal Creek Water System	P.O. Box 2985	Silverdale	WA	98383	50	30,000	41	41	CK	Hosman Circle, 4756
165002	Crystal Springs	4500 Crystal Springs RD	Bainbridge Island	WA	98110		5,000	22	19	BI	Crystal Springs Dr., 4500
055653	Day Road Industrial Park	7689 NE Day Road	Bainbridge Island	WA	98110			0	4	BI	Day Road, 7689

PWS ID	System Name	Mail Address	Mail City	Mail State	Mail Zip	Well Pump	Stor	Conn App	Conn Curr	Loc	Road Address
10340E	Delta Long Lake Homeown. A	5218 S.E. Delta Place	Port Orchard	WA	98366	35		20	14	SK	Delta Place S.E., 5213
19050W	Deseret Park Water System	3268 NE First Street	Bremerton	WA	98311	25	43,000	37	20	CK	Rest Place N.E., 6107
10327J	Eagle Harbor Marina	P.O. Box 11217	Bainbridge Island	WA	98110	47	3,000	3	2	BI	Ward Ave. N.E., 5834
20809Q	Eagledale Park	P.O. Box 10010	Bainbridge Island	WA	98110	15		0	3	BI	Rose Avenue
275361	Evergreen Lutheran Church	P.O. Box 740	Seabeck	WA	98380			2	1	CK	Seabeck Holly Road, 3200
40201W	Faith Fellowship	P.O. Box 3325	Silverdale	WA	98383	23	1,100	3	2	CK	Newberry Hill Road, 5701
SP225X	Fay Bainbridge State Park	15446 Sunrise Drive NE	Bainbridge Island	WA	98110	35	315	0	35	BI	Sunrise Drive N.E., 15446
24800B	Ferncliff Water Assoc	8800 Grand Ave	Bainbridge Island	WA	98110	16	11,550	17	17	BI	Ferncliff, 8818
SP305J	Fort Ward State Park	15446 Sunrise Drive N.E.	Bainbridge Island	WA	98110		122,500	0	2	BI	Fort Ward Hill
63918X	Foss Road Water	Po Box 709	Keyport	WA	98345	36	35,000	41	38	NK	Treefarm Lane, 22389
45533D	Four Corner Deli Mart Water	28072 State Hwy 3 NE	Poulsbo	WA	98370	18		2	2	NK	Hwy 3, 28072
27236M	Gatewood Mobile Manor	8510 174th Ave Kps	Longbranch	WA	98351	40		23	23	SK	State Hwy 160 S.E., 6521
IH281J	George Family	14401 George Lane NE	Poulsbo	WA	98370	8	5,100	0	18	NK	George Lane Ne, 14401
362419	Glenwood Farms No. 1 (East)	P.O. Box 336	Gig Harbor	WA	98335	90		34	34	SK	Old Farm Road SW, 3209
362332	Glenwood Farms No. 2 (West)	P.O. Box 336	Gig Harbor	WA	98335	76		19	16	SK	Timberwood Place SW, 14400
28385L	Golden's Mobile Home Park	8760 State Hwy 303 N	Bremerton	WA	98310	50		18	18	CK	State Hwy 303 N., 8760

PWS ID	System Name	Mail Address	Mail City	Mail State	Mail Zip	Well Pump	Stor	Conn App	Conn Curr	Loc	Road Address
067703	Grace Bible Church	7070 Bethel Burley RD SE	Port Orchard	WA	98367	33		1	1	SK	Bethel-Burley, 7070
25341A	Graham Place Water System	P.O. Box 123	Port Orchard	WA	98366	26	23,000	22	15	BI	Ada's Will Lane, 6515
29594N	Green Mountain Acres	P.O. Box 12216	Bothell	WA	98365	35	5,300	29	29	CK	Symes Road, 11436
033688	Green Mt. Elementary	P.O. Box 1989	Poulsbo	WA	98370	150	210,000	1	1	CK	Boundary Trail NW, 3860
31566E	Gresham Water System	P.O. Box 1600	Poulsbo	WA	98370	59		23	23	NK	Dove Lane NW, 24111
01832W	Harbor Crest	P.O. Box 1989	Poulsbo	WA	98370	60	20,000	23	20	BI	Harbor Crest Drive N.E.
06916W	Hazel Creek Montessori	P.O. Box 123	Port Orchard	WA	98366			0	2	BI	Koura Road, 8903
336255	Hogans Water	Po Box 123	Port Orchard	WA	98366	60		16	16	CK	Hogan Lane N.W., 955
33969M	Homestead Acres	P.O. Box 336	Gig Harbor	WA	98335	85	10,000	44	40	CK	Abbey Road, 11475
340198	Hood Canal Highlands	P.O. Box 336	Gig Harbor	WA	98335	95	31,000	36	25	CK	Honeyhill Loop N.W.
34040C	Hood Canal Vista	P.O. Box 114	Seabeck	WA	98380	34	3,700	35	24	CK	Stavis Bay Road
23994T	Hoot Ridge	Po Box 123	Port Orchard	WA	98366	38		18	18	CK	Hoot Ridge Lane, 8981
07378R	Horseshoe Lake Golf Course	Po Box 235	Gig Harbor	WA	98335	30		0	3	SK	Sidney
34483F	Horseshoe Lk County Park	1200 N.W. Fairgrounds RD	Bremerton	WA	98310	30		0	1	SK	Sidney Road
00567T	Hunt Community Water	P.O. Box 20429	Seattle	WA	98102	75	17,000	24	24	SK	Palisades Lane, 8034
SP335A	Illahee State Park	3540 Bahia Vista	Bremerton	WA	98310			1	1	CK	Sylvan Way
35880H	Inwood Beach Club	4535 SE Inwood Lane	Port Orchard	WA	98366			36	32	SK	Inwood Lane S.E., 4558
36098X	Island Center Comm.	P.O. Box 10010	Bainbridge Island	WA	98110	3		0	1	BI	Flecther Road

PWS ID	System Name	Mail Address	Mail City	Mail State	Mail Zip	Well Pump	Stor	Conn App	Conn Curr	Loc	Road Address
00588U	Islandwood Estates	P.O. Box 123	Port Orchard	WA	98266	67		14	14	BI	Justin Court
36782F	Johanson Water	Po Box 709	Keyport	WA	98345	24	35,000	40	40	NK	Fox Glove Lane, 5711
038619	Kingdom Hall Jehovah's Witnesses	2300 6th ST	Bremerton	WA	98312	50		0	2	NK	Lincoln Road NE, 4861
SP345K	Kitsap Memorial State Park	202 NE Parks ST	Poulsbo	WA	98370	30	315	17	17	NK	N.E. Park Street, 202
43727B	Klahanie	P.O. Box 1989	Poulsbo	WA	98370	69	84,000	40	34	CK	Klahanie Lane
IH433J	Klallam Smoke Shop	31912 Little Boston Road NE	Kingston	WA	98346			UND	3	NK	Indian Reservation
43100E	Kountry Korner Grocery	27099 Miller Bay Road	Kingston	WA	98346	30		4	4	NK	Miller Bay Road., 27099
438789	Lake Emelia Water System	P.O. Box 2111	Port Orchard	WA	98366	34	11,670	17	17	SK	Baker Road SE, 3233
439010	Lincoln Hill Estates	Po Box 123	Port Orchard	WA	98366	48	4,300	19	17	NK	Pond View Lane Ne, 20349
476705	Lofall Water	27715 NE Beham Street	Poulsbo	WA	98370	50	4,500	30	24	NK	Beham Street, 27715
196368	Long Lake County Park	1200 Fairgrounds RD NW	Bremerton	WA	98310	11	8,000	0	2	SK	Long Lake Road
40830D	Long Lake View Estates-1	Po Box 335	Gig Harbor	WA	98334	60		9	15	SK	Wyvern Dr SE 8982
00045L	Look Out Point	Po Box 336	Gig Harbor	WA	98335	170		28	28	NK	
07071R	Manor Farm Inn Water Sys.	Po Box 123	Port Orchard	WA	98366	27		1	1	NK	Big Valley Road Ne, 26069
510007	Manzanita Water Assn	P.O. Box 123	Port Orchard	WA	98366			16	16	BI	Miller Road N.E., 11955
00889Q	Matheson Water	P.O. Box 123	Port Orchard	WA	98366	31		6	6	SK	Bethel Road
17690K	Mayvolt Hills	P.O. Box 366	Gig Harbor	WA	98335	84	30,000	41	40	SK	Mayhill Drive S.E., 4247

PWS ID	System Name	Mail Address	Mail City	Mail State	Mail Zip	Well Pump	Stor	Conn App	Conn Curr	Loc	Road Address
54200N	Messenger House	10861 Manitou Park Blvd.NE	Bainbridge Island	WA	98110	25	2,000	1	1	BI	Manitou Park Blvd. N.E., 10861
55217L	Miracle Ranch	15999 Sidney RD SW	Port Orchard	WA	98366	53	13,000	29	4	SK	Sidney Road S.W., 15999
086745	Montessori Country School	10994 Arrow Point DR	Bainbridge Island	WA	98110	15		1	1	BI	Arrow Point Drive, 10994
77356E	Morgensen/Ground Zero	3495 Dyes Inlet NW	Bremerton	WA	98312	14		5	5	NK	Clear Creek Road, 16091
05345A	Naval Hospital & Jackson Park	Public Works Dept. N8a11, Bldg 1034	Silverdale	WA	98315			0	40	CK	
586138	Nesika Bay Water System	P.O. Box 1989	Poulsbo	WA	98370	77		38	38	NK	Nesika Bay
08313P	Oien Construction Water System	Po Box 1989	Poulsbo	WA	98370	33	0	6	6	CK	16116 NW Church RD
53425Y	Olalla Food Center	12668 Olalla Valley Road	Olalla	WA	98359	29		0	2	SK	Olalla Valley Road, 12675
63212X	Olalla Guest Lodge Inc.	12851 SE Lala Cove Lane	Olalla	WA	98359	25	20,000	0	1	SK	Lala Cove Lane, 12851
02273Q	Olalla Navy Housing	1101 Tautog Circle, Suite 313	Silverdale	WA	98315-4341	33	20,000	UND	12	SK	La La Cove S.E.
63213E	Olalla School	1962 Hoover Ave S.E.	Port Orchard	WA	98366	25	4,800	0	1	SK	Burley Olalla Rd., 6100
63215F	Olalla Water System	P.O. Box 336	Gig Harbor	WA	98335	30	20,000	30	25	SK	Crestview S.E. , 7654
04184H	Old Bangor Water District	7007 Herried RD NW	Silverdale	WA	98383	100	40,000	42	42	CK	Herried Road, 7007
63498B	Oly. View Assy Of God	P.O. Box 128	Silverdale	WA	98383			0	2	CK	Silverday Way, 11623
63478U	Olympic Circle Water	16800 Olympic Circle Dr.	Silverdale	WA	98383	50	12,000	14	18	CK	Olympic Circle Dr., 16758
48938P	Olympic Lutherhaven	Po Box 658	Silverdale	WA	98383	50		0	1	CK	Holly Road N.W., 9375

PWS ID	System Name	Mail Address	Mail City	Mail State	Mail Zip	Well Pump	Stor	Conn App	Conn Curr	Loc	Road Address
63650E	Olympic View Water Assoc	13621 Olympic View RD NW	Silverdale	WA	98383	52	10,250	20	20	CK	Olympic View Road, 13621
66665F	Pearson School	1365 NW Finn RD	Poulsbo	WA	98370	45	1,500	0	1	NK	Central Valley Road, 15650
47240V	Pebble Ridge Water System	Po Box 123	Port Orchard	WA	98366	50	30,000	42	41	SK	Pebble Place SE
63210W	Phelps Road Water System	Po Box 709	Keyport	WA	98345	29	18,500	26	23	BI	Phelps Road, 13270
67390B	Pilgrim Firs Church Camp	Po Box 694	Port Orchard	WA	98366	43	18,000	3	2	SK	Lake Flora Road S.W., 3318
37286Y	Pine Road Estates	P.O. Box 246	Gig Harbor	WA	98335	74		20	18	SK	Hunter Lane SW, 4135
67715C	Pioneer Hill West	1744 Brothers Lane N.W.	Poulsbo	WA	98370	50	21,000	34	29	NK	Brothers Lane N.W.
169646	Place Eighteen	1081 Hildebrand, Ste. 202	Bainbridge Island	WA	98110			18	18	BI	Eagle Harbor Drive, 18089
00323E	Port Gamble Water Dept	P.O. Box 1780	Poulsbo	WA	98370	50	46,000	45	45	NK	State Hwy. 104
IH019L	Port Madison Bingo Hall	P.O. Box 797	Suquamish	WA	98392	100	10,000	0	1	NK	Suquamish Way Ne, 15347
473864	Port Orchard Market & Deli	5455 Sidney RD SE	Port Orchard	WA	98366	17		1	1	SK	Sidney Road S.W., 5455
02354V	Port Orchard Nazarine	4647 Sidney Road SE	Port Orchard	WA	98366			0	1	SK	S.E. Blueberry, 910
691527	Poulsbo Heights	P.O. Box 1989	Poulsbo	WA	98370	50		32	29	NK	Commerce Street
07074A	Poulsbo Service Center Pse	Po Box 97034 Obc 11n	Poulsbo	WA	98370				1	NK	
69151P	Poulsbo Sportsman Club	P.O. Box 2468	Poulsbo	WA	98370			1	1	NK	Clear Creek Road N.W., 16990
697206	Prospect Point Beach Club	P.O. Box 21	Olalla	WA	98359	85	17,000	46	39	SK	Shoreline Drive
192460	Puddingstone	P.O. Box 624	Silverdale	WA	98383	50	345,000	32	31	CK	Puddingstone Lane, 10210

PWS ID	System Name	Mail Address	Mail City	Mail State	Mail Zip	Well Pump	Stor	Conn App	Conn Curr	Loc	Road Address
01031B	Ravens Reach	P.O. Box 123	Port Orchard	WA	98366	20	23,500	16	16	BI	Wimsey Ave NE, 5799
71727A	Regency Park	P.O. Box 336	Gig Harbor	WA	98335	20	30,000	34	31	SK	Regency Drive S.E., 6805
72200L	Rhododendron Heights	6210 Fern Leona RD	Bremerton	WA	98312	72	105,000	34	34	CK	Seabeck Hwy. N.W., 3666
72210V	Rhododendron M/H Park	1106 18th ST	Bremerton	WA	98337	49	30,000	0	14	CK	Orweiler Lane Nw, 16000
66932J	Rose Avenue Water Assoc.	5950 Rose Loop NE	Bainbridge Island	WA	98110	14	12,000	17	17	BI	Rose Ave N.E., 5762
74743Y	Royalwood	P.O. Box 336	Gig Harbor	WA	98335	30	20,000	42	37	SK	Royalwood Court
IH7267	Sackman Community Water	P.O. Box 498	Suquamish	WA	98392			UND	17	NK	Indian Reservation
75607X	Salsbury County Park	1200 NW Fairgrounds Rd.	Bremerton	WA	98310	20		0	1	NK	Whitford/Shine Street
764679	Scandialand M/H Park	Po Box 123	Port Orchard	WA	98366	30		27	26	NK	Central Valley Road
76925V	Seavue Water System Assoc	P.O. Box 155	Seabeck	WA	98380		21,000	26	23	CK	Seaview Drive
77640F	Serenity Group Home	P.O. Box 10038	Bainbridge Island	WA	98110			0	1	BI	Pleasant Beach Dr., 4500
32980E	Sherman Hill Water	1890 Ptartmigan Lane NW	Poulsbo	WA	98370			24	16	NK	Ptarmigan Lane, 1932
79275E	Silver Springs Estates	Po Box 336	Gig Harbor	WA	98335	60	23,500	41	23	NK	Silver Spring Lane
18038E	Silverdale Pee Wees	P.O. Box 44	Silverdale	WA	98383	31		0	1	SK	Schold Lane N.W., 11444
239116	Sivo Acres	P.O. Box 336	Gig Harbor	WA	98335	25	20,000	25	24	SK	Brentwood, 222
08586A	Skookum Ranch	Po Box 336	Gig Harbor	WA	98335	70	1,000	21	20	NK	Ryan Drive, 3507
80825C	Snider Field	P.O. Box 1476	Poulsbo	WA	98370			0	1	NK	ST Hwy 3 Nw, 22872
81860W	South Keyport Heights	13913 S. Keyport Road	Poulsbo	WA	98370	60	6,000	41	41	NK	South Keyport Road

PWS ID	System Name	Mail Address	Mail City	Mail State	Mail Zip	Well Pump	Stor	Conn App	Conn Curr	Loc	Road Address
81978D	South Kitsap Little League (Southern)	P.O. Box 86	Olalla	WA	98359			0	1	SK	Hovgaard Road
83424J	Spruce Road	P.O. Box 336	Gig Harbor	WA	98335	60	30,000	31	28	SK	Forest Glen Road, 14604
013452	ST Bedes Episcopal Church	PO Box 123	Port Orchard	WA	98366	15		1	1	SK	Bethel-Burley Road, 6878
83884L	Stavis Creek	P.O. Box 1989	Poulsbo	WA	98370	75	5,000	0	21	CK	Seabeck-Holly N.W., 17843
12180B	Store At Central Valley	4821 Deer Creek LN	Gig Harbor	WA	98335	7		0	3	CK	Central Valley Road Ne., 10400
84623B	Strawberry Hill Park	P.O. Box 10010	Bainbridge Island	WA	98110	12	4,100	0	1	BI	High School Road
05982K	Striebel's Corner	16095 Clear Creek Road	Poulsbo	WA	98370	33		1	1	NK	State Hwy 104, 26605
022727	Sundquist Water System	P.O. Box 123	Port Orchard	WA	98366	45		2	1	NK	Sawdust Hill RD N.W., 3809
85320F	Sunny Cove Water	P.O. Box 336	Gig Harbor	WA	98335	120	7,000	44	36	SK	Olalla Valley, 9100
85640C	Sunrise Beach	P.O. Box 806	Kingston	WA	98346	57	35,200	40	24	NK	Sunrise Beach Dr., 7993
86115L	Sunset Farms	Po Box 123	Port Orchard	WA	98366	30	11,000	18	17	CK	Mountain Vista Lane, 7505
861209	Sunset Hills Water Assoc	P.O. Box 10735	Bainbridge Island	WA	98110	75	35,000	35	31	BI	Sunset Loop N.E., 11641
109552	Templeton's Camp Union Grc	P.O. Box 123	Port Orchard	WA	98366	80		8	8	CK	Holly Road N.W., 14184
91470N	Verdan Anderson Hill	P.O. Box 336	Gig Harbor	WA	98335	20	4,500	16	14	CK	Lathrop Lane N.W.
91921J	Vinland Lutheran Church	18213 Viking Way NW	Poulsbo	WA	98370			0	2	NK	Finn Hill Road, 2751
05369W	Voyager Montessori Elementary School	P.O. Box 123	Port Orchard	WA	98366	10		1	1	BI	High School Rd., 8225

PWS ID	System Name	Mail Address	Mail City	Mail State	Mail Zip	Well Pump	Stor	Conn App	Conn Curr	Loc	Road Address
02495J	Ward, Sam Water System	27462 Big Valley Road N.E.	Poulsbo	WA	98370	31		3	3	NK	Big Valley Road N.E., 27462
39740L	Wauna Easley	P.O. Box 336	Gig Harbor	WA	98335	46		31	25	SK	162nd ST Nw, 8211
948604	West Port Blakely	4200 Blakely Ave. NE	Bainbridge Island	WA	98110			16	18	BI	Blakely Avenue N.E., 4198
01668H	Western Stavis Div 2 & 3	P.O. Box 20429	Seattle	WA	98102	37	23,500	33	20	CK	Rogers Road
960942	Whispering Firs M/H Park	PO Box 123	Port Orchard	WA	98366	70		36	36	CK	Silverdale Way, 12354
968608	Wildcat Lake County Park	1200 Fairgrounds Road NW	Bremerton	WA	98310	47		0	3	CK	Holly Road N.W., 9205
01402L	Wilderwood Development	1154 Bertha Ave NW	Bremerton	WA	98312	125	33,000	49	44	NK	Tytler Road N.E.
47451W	Wilderwood Homeowners Assoc.	P.O. Box 413	Seabeck	WA	98380	120		46	45	CK	Holly Road
010234	Windrift	P.O. Box 336	Gig Harbor	WA	98335	37		24	23	SK	Fairview Lake Road (Paradise, Spindrift)
98684P	Wye Lake Acreages	7948 SW Alta Vista Drive	Port Orchard	WA	98366	34	30,000	46	41	SK	Alta Vista Drive, 7875

Footnote:
(1) Data Obtained from the Kitsap County Health District (KCHD) water system database May 2004

Appendix H

Kitsap County Group B Water Systems

PWS ID	System Name	Mail Address	Mail City	Mail State	Mail Zip	Well Pump	Stor	Conn App	Conn Curr	Loc	Road Address
019408	A Well No. 9	15903 Vincent RD NW	Poulsbo	WA	98370	12	1,100	8	8	NK	Vincent Road N.W., 15903, 15913
01927B	A. C. Water System	5853 N.W. Newberry Hill RD	Silverdale	WA	98383	34		7	7	CK	Newberry Hill Road N.W., 5835
02323K	A2o Water System					16	1,000	4	2	SK	La La Cove S.E.
07493U	Abbey Water	Po Box 1989	Poulsbo	WA	98370	8	1,000	4	4	NK	Lincoln Road, 3577
087179	Abbott-Dahl-Dawson-Schumaker	Po Box 1116	Olalla	WA	98359	32		0	4	CK	Starr Road S.E., 15010
06890Q	Abc Water Well	6385 S.E. Olalla Valley RD	Port Orchard	WA	98367	25		0	4	CK	Midland Road
03658C	Adcock Water System	P.O. Box 336	Gig Harbor	WA	98335	32		3	3	SK	S.E. Nelson Road
05386V	Agate Community	16790 Agate Point RD	Bainbridge Island	WA	98110	19	1,100	9	7	BI	NE North Street
00707H	Agate Pass Estates	P.O. Box 123	Port Orchard	WA	98366	33	0	6	3	NK	Hwy 305
639476	Agate Point	P.O. Box 11466	Bainbridge Island	WA	98110	13	1,000	4	4	BI	Agate Point Road
06403E	Agatewood	P.O. Box 1989	Poulsbo	WA	98370	23		3	2	BI	Agatewood Ne, 16171
01089R	Agua Blair	P.O. Box 1989	Poulsbo	WA	98370	7	1,000	6	3	CK	Klahowya Road
31947Y	Ahhaws	425 Sunnyhill Road	Bremerton	WA	98312	30		9	7	CK	Rising Hill Lane NW
373148	Aiken Road Water System	3673 Aiken Road	Port Orchard	WA	98366	18		4	4	SK	Aiken Road S.E., 3657
40342K	Airport Park	P.O. Box 1989	Poulsbo	WA	98370	40	1,000	9	9	CK	Holly Road, 9060
05955B	Al & Barney's Investment Water Sys.	6100 Bethel Avenue SE	Port Orchard	WA	98367	19		2	2	SK	Bethel Avenue S.E., 6100
00298P	Alder Draw Water System	4693 Calamity Lane	Bremerton	WA	98312	15		4	4	CK	Calamity Lane, 4695
01732R	Alder Road	1404 S.W. Clifton Road	Port Orchard	WA	98366	29		5	4	SK	Clifton Road, 1572

PWS ID	System Name	Mail Address	Mail City	Mail State	Mail Zip	Well Pump	Stor	Conn App	Conn Curr	Loc	Road Address
63386X	Alford Homes I Water System	8483 Fernclilff Ave NE	Bainbridge Island	WA	98110	12	1,100	8	8	BI	Ferncliff Road, 8483
02310R	Alice Kimball Water System					18	1,000	2	2	BI	Manual Road NE
01735A	Almquist Water	1176 NW Sherman Hill Road	Poulsbo	WA	98370	31		5	4	NK	Sherman Hill Road N.W., 1158
37166A	Alpenschon Water System	6776 NW Puddingstone	Silverdale	WA	98383	21		4	4	CK	Puddingstone Lane N.W., 6776
01836Y	Alpine Terrace M/H Park	7124 ST Hwy 3 SW	Port Orchard	WA	98366	21		0	5	SK	Hwy 3 S.W., 7124
010276	Amanda Water	P.O. Box 336	Gig Harbor	WA	98355	37		4	6	SK	Wicks Lake Road
676137	Amber Water Assoc.	4732 Taylor Ave	Bainbridge Island	WA	98110	4		9	9	BI	Taylor Ave N.E., 4732
02062P	Amis Water	8730 Ferncliff NE	Bainbridge Island	WA	98110	5		0	3	BI	Ferncliff Ave N.E., 8730
43564K	Amy's Acres	4380 Gunderson Rd.	Poulsbo	WA	98370			4	4	NK	Gunderson Road, 4380
058280	Andy Parris Industrial Park					43		10	10	NK	Beaver Ridge Lane Nw, 170
436404	Archibald/Gustafsen	11720 Brian Lane NW	Silverdale	WA	98383	22		4	2	CK	Miz Malia Lane Nw, 12343
03925E	Argonaut	P.O. Box 1989	Poulsbo	WA	98370	35		6	2	BI	Sanwick Place
63351K	Arlington Water System	6818 Arlington Place S.E.	Port Orchard	WA	98366	42		8	8	SK	Arlington, 6818
47489T	Arrow Point Water	11272 Arrow Point Drive NE	Bainbridge Island	WA	98110		2,300	6	3	BI	Arrow Pt. Dr. N.E., 11272
032853	Asuelo	4305 Lakeview Dr., S.E.	Port Orchard	WA	98366			5	4	SK	Lakeview Drive S.E., 4305
046043	Avery Water					7	2,500	9	6	NK	Foss Road
00629X	B.B. West Water	858 SE Wolf LN	Port Orchard	WA	98367	26		4	4	SK	Bethel-Burley Road
03710B	Backland Well System	4935 N.E. Tolo RD	Bainbridge Island	WA	98110	16	1,000	6	6	BI	Tolo Road N.E., 4937
58132L	Bainbridge Green	8824 N.E. New London Court	Bainbridge Island	WA	99110	15	1,150	8	8	BI	New London Ct. N.E.
037950	Bainbridge Is Saddle	P.O. Box 10456	Bainbridge Island	WA	98110			1	1	BI	Day Road

PWS ID	System Name	Mail Address	Mail City	Mail State	Mail Zip	Well Pump	Stor	Conn App	Conn Curr	Loc	Road Address
090203	Bainbridge Island Fire Dept (Bucklin Hill)	C/O 8895 Madison Ave N	Bainbridge Island	WA	98110	3	20,000	0	1	BI	Bucklin Hill RD N.E., 7934
037971	Bainbridge Island Sportsm	625 Winslow Way East	Bainbridge Island	WA	98110			0	3	BI	Sportsman Club Rd., 8221
95625F	Bainbridge No. 1	Po Box 2985	Silverdale	WA	98383	5		8	8	BI	Blakely Ave N.E., 5763
05308U	Ball-Robinette Water System	P.O. Box 336	Gig Harbor	WA	98335	34		6	4	SK	Bethel Burley, 12854
05292X	Baltic Water System	31109 Baltic Ln. NE	Poulsbo	WA	98370	21		4	4	NK	Off Baltic Ln., Sp#5382
03071H	Bandix/Concept					30		4	4	SK	Bandix
023032	Barnes Water System	24742 Pioneer Way N.W.	Poulsbo	WA	98370	11	500	4	4	NK	Pioneer Way N.W., 24742
00903P	Bart Water	17667 Noll Rd.	Poulsbo	WA	98370	33		6	6	NK	Noll Road
04386T	Barton, William Water	5223 Hillcrest	Port Orchard	WA	98366			0	2	SK	Hillcrest E., 5223
07436U	Battle Point Water System	Po Box 123	Port Orchard	WA	98366	10	3,000	4	4	BI	Battle Point DR Ne, 9675
04726R	Bauers Water Supply	30 Leland Valley Rd. W	Quilcene	WA	98376	15		0	3	NK	Lakeness Road N.W., 3114
20925A	Baw	24583 Waghorn RD NW	Poulsbo	WA	98370	25		6	6	NK	Waghorn Road, Next To 24591
06413P	Bay Ridge	P.O. Box	Poulsbo	WA	98370	25		6	4	NK	Bay Ridge, 16148
60446U	Bbd Water System	14739 Henderson Rd. NE	Bainbridge Island	WA	98110	42		7	5	BI	Henderson RD Ne, 14747
055484	Beach Head No. 2	3105 Lakeness RD	Poulsbo	WA	98370	32		3	3	NK	Gresham Place, 28799
04084C	Beach Head No.1	3105 NW Lakeness Road	Poulsbo	WA	98370	32		6	6	NK	Gresham Place, 28799
054145	Beller Water System	1585 Minterbrook Rd. S.W.	Port Orchard	WA	98367	27		4	4	SK	Minterbrook Road S.W., 1585
473611	Bellingham Water System	7671 Bellingham Avenue S.E.	Port Orchard	WA	98366	21		4	2	SK	Bellingham Ave S.E., 7671
05703R	Bennett-Suffis-Norton	11646 Arrow Point Dr.	Bainbridge Island	WA	98110			0	3	BI	Arrow Point Dr., 11656
33404V	Benson's Olympic Water 1	24298 Stottlemeyer Road	Poulsbo	WA	98370	15	1,400	9	5	NK	Stottlemeyer Road N.E., 24158

PWS ID	System Name	Mail Address	Mail City	Mail State	Mail Zip	Well Pump	Stor	Conn App	Conn Curr	Loc	Road Address
02299B	Bentjapple	P.O. Box 1989	Poulsbo	WA	98370	33		6	6	NK	Taka Lane
009068	Bentley-Foraker	30019 Scenic DR NE	Poulsbo	WA	98370	29		6	6	NK	Scenic Drive, 30019
05826Y	Berg Water	27621 Parcell RD NE	Kingston	WA	98346	14		6	7	NK	Parcell Road N.E., 27621
37383J	Bergquist Water System	P.O. Box 1989	Poulsbo	WA	98370	25		6	5	CK	Central Valley Rd., 10365
086576	Bergstom, Kurt	12647 Wye Blvd SW	Port Orchard	WA	98467	15		0	3	SK	Wye Lake Blvd., 12675
053774	Bergstrom	P.O. Box 1989	Poulsbo	WA	98370	26		4	4	NK	Virginia Point RD Ne, 16281
03374E	Bernhard Water	16241 Agate Point Road NE	Bainbridge Island	WA	98110	28		4	4	BI	Agate Point Road, 16250
40645H	Berry Ridge Estates Hoa	7959 Berry Ridge Lane NW	Silverdale	WA	98383	30		8	8	CK	Berry Ridge Road, 7967
10996L	Berry Water System	1474 S.E. Cedar Road	Port Orchard	WA	98366	12		0	2	SK	S.E. Cedar Road, 1474
401409	Bert & Ernie Water System	1138c Walnut	Bremerton	WA	98310	15	2,200	6	2	CK	Sesame Street
15137V	Bessett, Sandra	13892 Carney Lake Road	Port Orchard	WA	98366			0	2	SK	Oregon S.E., 1547
05900F	Best Water System	P.O. Box 4056	South Colby	WA	98384	10	2,000	5	5	SK	Woods Road E., 1418
919201	Bevins	5650 NE Tolo RD	Bainbridge Island	WA	98110			4	4	BI	Tolo Road N.E., 5660
08074C	Big Beef Fisheries	9744 Manley RD NW	Seabeck	WA	98380	55		1	1	CK	Manley Road N.W., 9744
36681U	Big Bird Water System	1138 C Walnut	Bremerton	WA	98310	38		8	6	CK	Big Bird Lane N.W., 8328
05291D	Big Corner Water System	P.O. Box 1989	Poulsbo	WA	98370	29		6	6	NK	S Kingston RD NE And Maloney LN NE
54614H	Big Dave's Water System	10233 Pioneer Road N.W.	Seabeck	WA	98380	31		9	7	SK	Old Clifton Road, 6742
05478R	Big O Fayfull	P.O. Box 1989	Poulsbo	WA	98370	44		4	3	NK	Port Gamble Rd. Ne, 24311
008845	Big Valley Water	24010 Big Valley Road	Poulsbo	WA	98370	28		4	3	NK	Big Valley Road, 24100

PWS ID	System Name	Mail Address	Mail City	Mail State	Mail Zip	Well Pump	Stor	Conn App	Conn Curr	Loc	Road Address
07115D	Bird Electric Light Industrial Park	22930 Stottlemeyer Road NE	Poulsbo	WA	98370			6	1	NK	Stottlemeyer Road N.E., 22930
026928	Black Bear Water System					30		6	0	NK	Pioneer Road N.W.
47411V	Blake, Ken Water System	P.O. Box 4061	South Colby	WA	98384	27		6	5	SK	Long Lake Road
15710H	Blankenbaker	2801 Montwood Lane	Bremerton	WA	98312			0	1	CK	Newberry Hill Road N.W., 8200
029534	Blatte Water System	P.O. Box 336	Gig Harbor	WA	98335	25		6	6	SK	Joy Lane S.W.
11001L	Blazina Water	7001 Fletcher Bay Rd. NE	Bainbridge Island	WA	98110			0	2	BI	Fletcher Bay Road, 6945
45355P	Bliss Water System	Po Box 1978	Port Orchard	WA	98366			0	4	SK	Long Lake Rd., 7238
04083V	Blue Heron	P.O. Box 1989	Poulsbo	WA	98370	33		4	3	CK	Seaview Drive, 14719
073757	Bms Water System	Po Box 1989	Poulsbo	WA	98370	27		6	3	NK	Sawdust Road Ne, 1509
AA316G	Bode, Off Minterbrook	P.O. Box 336	Gig Harbor	WA	98335	36		4	0	SK	Minterbrook,
018992	Boetter Water					33		5	3	BI	West Port Madison
035881	Bog Water System	9005 Klahowya Trail NW	Bremerton	WA	98310			3	4	CK	Klahowya N.W., 9000
02683H	Bonapata	P.O. Box 1989	Poulsbo	WA	98370	36		4	4	NK	Hauf Lane
05372J	Bondale Water System	Po Box 1989	Poulsbo	WA	98370	10	1,000	6	5	CK	Bondale Ln. NW, 6423
04940E	Bonsell	P.O. Box 1989	Poulsbo	WA	98370	30		4	4	NK	Parcells Road
07725E	Booth Water	5521 17th Ave NE	Seattle	WA	98115			0	3	BI	New Sweden Road
05481D	Boquist/Wright	P.O. Box 336	Gig Harbor	WA	98335	31	0	6	5	SK	Wiley & Gallagher Lane
03887W	Borcher Water System	P.O. Box 123	Port Orchard	WA	98366	23		3	1	SK	Long Lake Road, 2987
077388	Borcherding Water	655 NW Lofall RD	Poulsbo	WA	98370	6		0	2	NK	Lofall Road N.W., 625
04728T	Bpib	625 Winslow Way East	Bainbridge Island	WA	98110	5	1,000	3	3	BI	Old Mill Road, 5335
08307H	Brandon	Po Box 123	Port Orchard	WA	98366	22	0	3	3		Lakeview Ct Nw, 4525

PWS ID	System Name	Mail Address	Mail City	Mail State	Mail Zip	Well Pump	Stor	Conn App	Conn Curr	Loc	Road Address
47281D	Brasch Road Water	3014 S.E. Concept Lane	Port Orchard	WA	98366	38		12	12	SK	Concept Lane, 2987
43551R	Brauer Estate Water	16710 Brauer Road N.E	Poulsbo	WA	98370	30		6	4	NK	Brauer Road N.E., 16754
037678	Breidablik Community Hall	P.O. Box 2444	Poulsbo	WA	98370	12		1	1	NK	Breidablik Place NW, 26580
00052A	Brickhouse Water System	P.O. Box 2109	Poulsbo	WA	98370			0	2	NK	Hwy 3 N.E., 28389
04127H	Bridgeview	P.O. Box 1989	Poulsbo	WA	98370	27		6	6	NK	Highway 104
00434B	Bridgeway Water					25		3	3	NK	
580818	Brisbane Water System	2732 French RD NW	Olympia	WA	98502	10	1,400	6	7	SK	Phillips Road, 7805
019049	Broken Head					25		4	4	CK	Chalet Lane, 8016
08760Y	Brookhaven	P.O. Box 44427	Tacoma	WA	98444	30		9	10	SK	Crest Drive SE
40316V	Broomgerrie	P.O. Box 2468	Poulsbo	WA	98370	10	1,125	9	7	BI	Grand Ave N.E., 8560
20775B	Brotherton Water	319 Tacoma Ave N. #704	Tacoma	WA	98403	13		0	2	BI	Madison Ave N.E., 14491, 14411
43789X	Brown, Ken Water System	20293 Pugh Road NE	Poulsbo	WA	98370	40		9	9	NK	Pugh Road N.E., 20293
60079M	Browning	8191 N.E. Selfors Lane	Bainbridge Island	WA	98110	3	1,100	3	3	BI	Selfords Lane, 8221
08810T	Brown-Lake Flora	P.O. Box 309	Burley	WA	98322	25		0	8	SK	Lake Flora Road, 3065
08833V	Brownlee Beach Tracts	29350 Beach Drive NE	Poulsbo	WA	98370			5	4	NK	Brownlee Tract, Lot 10
088856	Brownsville Water Dist No. 1	9080 Illahee RD NE	Bremerton	WA	98310			0	4	CK	Illahee Road N.E., 9094
00511D	Brunson Water System	P.O. Box 3547	Silverdale	WA	98383	10		4	4	CK	Sesame St., 8550
582148	Bulman Avenue	1344 SE Saddle Club Road	Port Orchard	WA	98366	15	1,400	7	7	SK	Bulman Road, 5385
09362J	Burdick Water	P.O. Box 54	Poulsbo	WA	98370	9		0	2	NK	Hidden Spring, 4030
016356	Burley Hills Homeowner Assn	P.O. Box 1989	Poulsbo	WA	98370	16	1,000	6	6	SK	Swafford Lane, 1036
07434T	Burnett, Bill	Po Box 1989	Poulsbo	WA	98370	31	0	3	2	NK	Gamble Bay Road, 28595

PWS ID	System Name	Mail Address	Mail City	Mail State	Mail Zip	Well Pump	Stor	Conn App	Conn Curr	Loc	Road Address
194761	Burston/Farrell	P.O. Box 10942	Bainbridge Island	WA	98110			0	2	BI	Wardwell Road, 9016
30640W	Butler Water System	1730 Clear Creek	Poulsbo	WA	98370			0	2	CK	Clear Creek Road N.W., 17030
372777	Bye Water System	P.O. Box 1053	Silverdale	WA	98383	10	1,000	9	7	CK	Dishman Road, 9902
43522H	Calkins Water	33527 Hansville RD NE	Kingston	WA	98346	14		0	3	NK	Hansville Road Ne, 33527
04636W	Camas Lane Water System	P.O. Box 1989	Poulsbo	WA	98370	31		9	9	SK	Camas Lane, 3587
634316	Cameron, John Water	9241 Lawrence DR SE	Port Orchard	WA	98366	18		4	3	SK	Lawrence Drive S.E., 9241
10910E	Camp Niwana	1109 Warren Ave	Bremerton	WA	98310	12	11,780	1	1	SK	Lake Helena Road S.W., 5290
47338V	Camp Water System	14095 Clear Creek RD N.W.	Silverdale	WA	98383	33		6	3	CK	Clear Creek Road, 14095
05288R	Campbell Water System	P.O. Box 1989	Poulsbo	WA	98370	31		6	4	NK	Johnson Road
324543	Canal View	13300 Lester Road NW	Silverdale	WA	98383	28		6	5	CK	Lester Road N.W., 13300
02298U	Cantu Lane Water System					46		6	3	CK	Gold Finch Lane, 14779
369268	Canyon Creek	16862 Noll RD NE	Poulsbo	WA	98370	15	1,100	8	8	NK	Noll Road, 16862
435484	Cardinal Lane Water	1955 Cardinal LN	Poulsbo	WA	98370	30		6	7	NK	Indiago Lane, 1734
052899	Cardoso Water System	P.O. Box 1989	Poulsbo	WA	98370	25		6	6	NK	Stottlemeyer RD NE
11162T	Carlton, Gloria	12840 Seabeck Hwy NW	Seabeck	WA	98380			0	2	CK	Seabeck Hwy, 12840
05387C	Carole/Swink	Po Box 1989	Poulsbo	WA	98370	24		4	4	BI	Lofgren Rd., 9977
00322X	Carroll/Slimmer	P.O. Box 1989	Poulsbo	WA	98370			3	1	SK	Phillips Road S.E., 5166
00152E	Carter Water System	29439 Beach DR NE	Poulsbo	WA	98370	40		0	2	NK	Beach Drive N.W., 29439
398795	Cascade I	26656 Trophy Ln.	Kingston	WA	98346	21		4	4	NK	Trophy Lane, 26632
184065	Casey Street Water Co. Llc	8815 Ferncliff Ave NE	Bainbridge Island	WA	98110	12	1,400	9	8	BI	Casey N.E., 1030

PWS ID	System Name	Mail Address	Mail City	Mail State	Mail Zip	Well Pump	Stor	Conn App	Conn Curr	Loc	Road Address
03982E	Cattail Water System					16	1,000	5	2	NK	Big Valley Road, 24658
11943U	Cedar Lane Water	16510 Agate Point RD NE	Bainbridge Island	WA	98110			0	4	BI	Agate Pass Road N.E., 16510
03248L	Cedar Park Road Water System	P.O. Box 336	Gig Harbor	WA	98335	15	1,350	7	5	SK	SE Cedar Park Road, 15650
36897E	Cedar Ponds Water System	16150 Agate Pass RD NE	Bainbridge Island	WA	98110	10	1,500	6	4	BI	Agate Pass Road N.E., 16150
03259C	Cedar Springs Water System	7354 Bethel-Burley Road	Port Orchard	WA	98366	28		1	1	SK	Bethel Burley Road, 7354
12110J	Cedar Water Supply	7240 Long Lake Road, SE	Port Orchard	WA	98367	44		6	5	SK	Cedar Road S.E., 1251
121112	Cedar Wells	18290 Viking Way N.W.	Poulsbo	WA	98370			0	7	NK	Hidden Springs Lane, 4030
24400U	Cedarwood	1920 Hogue Ct NE	Poulsbo	WA	98370	35		6	6	NK	Hogue Ct Ne, 1930
19061N	Central Valley Water Coop	15359 Central Valley RD NW	Poulsbo	WA	98370	20		0	4	CK	Central Valley Rd. N.W., 15359
30051W	Central Valley Water Syst.	15239 Central Valley Rd. NW	Poulsbo	WA	98370	17		6	3	CK	Central Valley Rd. N.W., 15201
12210N	Cessna Water	5653 N.E. Cessna Lane	Bainbridge Island	WA	98110	30		4	3	BI	Crystal Springs Dr. N.E., 3674
37157K	Cheryl's Well	1599 NW Mountain View Road	Silverdale	WA	98383	27		5	2	CK	Mt. View Road N.W., 1571
24042C	Chico Heights Community	P.O. Box 12216	Bothell	WA	98082	31		9	9	CK	Sagebrush, 3689
052857	Child's House B&B	8331 S.E. Willock Road	Olalla	WA	98359	16		1	1	SK	Willock Road, 8331
03037K	Church Road Water System	P.O. Box 1989	Poulsbo	WA	98370	38		6	4	CK	Church Road
12975P	Churchill Water Corp.	13509 Manzanita RD NE	Bainbridge Island	WA	98110		3,000	0	11	BI	Manzanita Road N.E., 13569
01734T	Claeys Water System	P.O. Box 3904	Silverdale	WA	98383	37		6	6	CK	Anderson Hill Road, 6530
13340M	Clark Acres Water	8787 Battle Point DR NE	Bainbridge Island	WA	98110			0	5	BI	Battle Point Rd. N.E., 5591

PWS ID	System Name	Mail Address	Mail City	Mail State	Mail Zip	Well Pump	Stor	Conn App	Conn Curr	Loc	Road Address
133457	Clark Terrace Water	P.O. Box 623	Port Orchard	WA	98366	12	14,000	8	7	SK	Hillcrest Dr. E., 5671
02201W	Clark Water	8208 SE Overaa RD	Port Orchard	WA	98366	20		0	2	SK	Overaa Road S.E., 8208
65127R	Clark, Richard	18106 Clear Creek Road	Poulsbo	WA	98370	40		8	7	NK	Clear Creek Road, 18106
05177V	Clauson Water System	P.O. Box 1989	Poulsbo	WA	98370	21	0	4	4	SK	Paradise Lane, 5033
13445B	Clayton Place	14421 Maple RD SE	Port Orchard	WA	98367	22	1,500	0	11	SK	Maple Road S.E., 14455
00435V	Clear Water	5275 Old Mill Road	Bainbridge Island	WA	98110	5	1,000	5	4	BI	Old Mill Road, 5275
60001P	Clearwater Lane Assoc.	8817 Clearwater Lane	Port Orchard	WA	98367	27		7	7	SK	Clearwater lane, 8899
136401	Clementz First Edition	5769 Blakely Avenue NE	Bainbridge Island	WA	98110	6		0	4	BI	Blakely Ave N.E., 5769
138554	Clifton Water Works	P.O. Box 335	Gig Harbor	WA	98335		1,500	0	7	SK	Old Clifton Road S.W., 1657
03376F	Coldear	Po Box 1989	Poulsbo	WA	98370	27	0	6	5	CK	
473252	Coldwater Water System	4452 Edgewood DR	Bremerton	WA	98310	38		6	6	NK	Vincent Road
13942E	Cole Water	5714 16th Ave NE	Seattle	WA	98105	15	1,000	4	4	NK	Jefferson Place, 24480
636994	Coleman Court Water	591 NW Coleman Court	Poulsbo	WA	98370	35		6	5	NK	Coleman Court
140534	Collett Water System	12095 Old Frontier RD	Silverdale	WA	98383	15		0	2	CK	Westgate Road N.W., 4142
14058P	Collins Water	P.O. Box 989	Silverdale	WA	98383	23		0	5	CK	Old Frontier Road, 11760
017442	Concept Park	9168 Genesis LN SE	Port Orchard	WA	98367	35		8	7	SK	Genesis
14556A	Conifer Crest Water	9189 NE Pioneer RD	Seabeck	WA	98380			0	4	CK	Pioneer Road N.W., 9189
242791	Conifer West	3060 N.W. Skiff Lane	Silverdale	WA	98383	30		4	4	CK	Skiff Lane N.W., 3060
191564	Cook Mountain View	P.O. Box 1282	Poulsbo	WA	98370	15		5	5	NK	Pugh Road, 20926
14786B	Cookson Well	P.O. Box 591	Port Orchard	WA	98366	25		6	5	SK	Sidney Road S.W., 9270

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20340F	Cool Water					25		4	3	CK	Hite Center Road, 15828
16690H	Coon James	1450 SE Cedar RD	Port Orchard	WA	98366			0	2	SK	Cedar Road S.E., 1450
02037H	Corbett Water System	2935 Woods Road E.	Port Orchard	WA	98366	10		0	2	SK	Woods Road E., 2935
01845P	Corr, Eugene	4221 51st Ave NE	Seattle	WA	98105	56		0	2	NK	Wheeler Street, 3794
585514	Cotner/Crist	17967 Noll Road NE	Poulsbo	WA	98370			4	2	NK	Noll Road N.E., 17965 & 17967
03720L	Country Homes Water System	P.O. Box 676	East Olympia	WA	98540	35		9	7	SK	Cynthia Lane
15487J	County Line Well	4395 Huge Creek RD SW	Port Orchard	WA	98366	19		3	3	SK	Green Leaf Lane S.W., 15880
03001P	Covenant Water System	8530 Bender Circle NE	Bremerton	WA	98310	8		0	2	CK	Clear Creek Road N.W., 15912
02290P	Coyote Flats No. 1	P.O. Box 1989	Poulsbo	WA	98370	27		6	5	SK	Michigan Street
02762L	Coyote Flats No. 2	P.O. Box 98	Manchester	WA	98353	25		6	4	SK	Michigan Street
577897	Cozy Lane No. 1	Po Box 78	Gig Harbor	WA	98335	31		6	9	SK	Cozy Lane, 1832
11939N	Crescent Moon	2510 Winters RD	Bremerton	WA	98310	19		0	3	CK	Winters Road, 2500
07675L	Crisp	6800 Meridian RD SE	Olympia	WA	98513	26		5	5	SK	Lake Helena
002744	Crocker Water Supply	16828 Noll RD	Poulsbo	WA	98370	14		3	3	NK	Hwy 305 N.E., 16836
54767F	Crosby No. 1 Water System	15652 Seabeck Hwy NW	Seabeck	WA	98380			9	8	CK	Mallard Lane
06338N	Damm	P.O. Box 123	Port Orchard	WA	98366	12	1,000	6	6	NK	Lindvog Rd, 27527
63436R	Davis Keith Cooperative	4731 Eagle Harbor DR NE	Bainbridge Island	WA	98110	12	1,000	6	4	BI	Eagle Harbor Drive, 4731
01087Q	Davis, Delbert Water	11087 N.W. Pioneer Road	Seabeck	WA	98380	25		6	5	CK	Pioneer Road, 11087
25956X	Day Road Water System	6765 NE Day RD	Bainbridge Island	WA	98110	19	1,000	4	3	BI	Day Road N.E., 6891
070093	Debry Downs No. 1	P.O. Box 123	Port Orchard	WA	98366	25		6		BI	Citation Court, 10152

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01849R	Deep Six Water System	15591 Sandy Hook RD NE	Poulsbo	WA	98370	27		3	3	NK	Sandy Hook Road N.E., 15591
314649	Deer Trail Water System	P.O. Box 2985	Silverdale	WA	98383	23	1,500	8	9	NK	Noll Road, 17445
06249A	Dekay Water System	P.O. Box 123	Port Orchard	WA	98366	32		4	4	NK	Bodine RD NE
186134	Delay Water System	27411 Lindvog RD NE	Kingston	WA	98346	14		0	3	NK	Lindvog Road, 27411
070093	Derby Downs No. 1	P.O. Box 123	Port Orchard	WA	98366	32		6	2	BI	Citation Ct, 10152
07010P	Derby Downs No. 2	P.O. Box 123	Port Orchard	WA	98366	36		6	2	BI	Citation Court, 10152
03791X	Devitt Well	12265 Olympic View Rd. NW	Silverdale	WA	98383			0	3	CK	Olympic View Rd. Nw, 12265
48795E	Dewdrop Lane Water System	P.O. Box 1989	Poulsbo	WA	98370	35		0	9	NK	Dewdrop Lane N.W., 18225
19205E	Diamond Drive Water	18365 Diamond DR N	Poulsbo	WA	98370	27		5	4	NK	Diamond Dr. N.E., 18365
32461T	Dicken Well	6965 S.E. Buchannen	Port Orchard	WA	98366	18	1,000	6	4	SK	Buchannen, 6961
77358F	Dickey Road Water Assoc.	5486 NW Eldorado Blvd	Bremerton	WA	98312	31		7	7	CK	Dickey Road, 8630
06495T	Dickson Water Supply	7355 Bethel Burley Road SE	Port Orchard	WA	98367-9523	8		0	2	SK	Bethel-Burley Road, 7355
18012U	Dietrichson	17169 Clear Creek RD NW	Poulsbo	WA	98370	15		0	2	NK	Clear Creek Road, 17169
03850H	Dipple Water System	P.O. Box 1989	Poulsbo	WA	98370	25		4	4	CK	Harrington, 15531
00237M	Dnm	15276 Crescent Vly DR SE	Olalla	WA	98359	24		4	4	SK	Crescent Valley Rd. S.E., 15276
02124U	Dolphin	7099 Dolphin Dr.	Bainbridge Island	WA	98110	5	1,000	4	4	BI	Dolphin DR N.E., 7069
02313A	Doris Street Water System	P.O. Box 123	Port Orchard	WA	98366	35		6	4	BI	Doris Street
63790L	Double Ds Water	4496 NW Cascade ST	Silverdale	WA	98383	5	1,150	4	4	CK	Merlin Lane N.W., 10170
19902T	Dougherty Water	12983 Ironwood Road NW	Poulsbo	WA	98370			0	4	CK	Olympic View Road, 15281
045949	Douglas Water System	6020 Eagle Harbor Drive	Bainbridge Island	WA	98110	13	1,150	5	3	BI	Eagle Harbor Drive, 6020

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399905	Dow Water System	10667 Fairview Blvd SW	Port Orchard	WA	98367	25		3	4	SK	Old Clifton Road, 1379
99149N	Drake Water System	P.O. Box 1989	Poulsbo	WA	98370	30		4	2	NK	Olive Drive N.E., 12201
035778	Dresel Water System	14900 Skogen Lane	Bainbridge Island	WA	98110	40		8	8	BI	Skogan Lane, 14900
AA238	Duarte Water System	Po Box 123	Port Orchard	WA	98366	25	0	5	2	SK	Banner RD Se, 11685
02845R	Dullum Water	P.O. Box 336	Gig Harbor	WA	98335	25		4	4	SK	Dullum Lane, 7163
016480	Dunn/Sherman Water System	33727 Hood Canal DR NE	Kingston	WA	98346	22		2	2	NK	Hood Canal Drive, 33727
030700	Duryea Road Water System	P.O. Box 1989	Poulsbo	WA	98370	30		5	2	CK	Duryea Road, 8264
20772T	Dyess, Carey Water System	100 Bay ST	Port Orchard	WA	98366			0	3	SK	Bethel-Burley Rd., 14754
053819	E.S. Woodshop	P.O. Box 1989	Poulsbo	WA	98370	21		6	3	NK	NE State Hwy 308, 18
073670	Eagledale Marina	5842 Main Street	Bainbridge Island	WA	98110			0	3	BI	Main Street, 5842
472778	Eagle's Rest	P.O. Box 456	Olalla	WA	98359	28		6	5	SK	Forsman Road S.E., 13455
00686X	Earthstar Water					32		6	6	SK	Bachelor Flat Lane, 105
22100A	Eastman Water	10899 Olallie Lane NE	Bainbridge Island	WA	98110	9	2,400	3	2	BI	0.
31501A	Echo Valley Water System	P.O. Box 1989	Poulsbo	WA	98370	21		4	4	CK	Echo Valley, 9425
05346U	Edquist	Po Box 78	Gig Harbor	WA	98335	31		0	8	SK	Cozy Lane
049852	Edwards Water System	786 SE Fauna Lane	Port Orchard	WA	98366	27		6	6	SK	Old Clifton Road Sw, 1336
225926	Ekstedt Water	17393 Viking Way NW	Poulsbo	WA	98370	15		0	2	NK	Viking Way, 17393
06477A	Elim Lutheran Church	5911 E. Hillcrest Drive	Port Orchard	WA	98366	17		2	2	SK	Hillcrest Drive, 5911
234502	Enetai	2012 Enetai Beach	Bremerton	WA	98310	7	14,000	0	14	CK	Enetai Beach
00685D	Erickson (Watson) Water	P.O. Box 473	Olalla	WA	98359	21		4	4	SK	Cedar Glen Lane S.E., 13456

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237406	Erickson Well Assn	33459 Hansville RD NE	Kingston	WA	98346			0	10	NK	Hansville Road N.E., 33321
01785L	Evanger Water System	P.O. Box 1989	Poulsbo	WA	98370	24		4	3	NK	Virginia Pt. Rd. Ne, 15789
07016T	Fagerud	P.O. Box 123	Port Orchard	WA	98366	31		6	3	SK	Fagerud, 14691
00277N	Family Meadows Water	9491 Bucsit Lane	Bainbridge Island	WA	98110	10		0	2	BI	Bucsit Lane NE, 9521
02580U	Feather Ridge No. 1	P.O. Box 1989	Poulsbo	WA	98370	47		7	6	NK	Feather Ridge Lane, 21286
032431	Feather Ridge No. 2	P.O. Box 1989	Poulsbo	WA	98370	48		6	6	NK	Feather Lane
247194	Feddock Water	Po Box 123	Port Orchard	WA	98366	30		7	7	SK	Clover Valley Road, 6455
36551X	Feigley Road Well No. 1	4801 Feigley RD SW	Port Orchard	WA	98367	10	1,100	3	1	SK	Feigley Road S.W., 4801
05844E	Ferguson	P.O. Box 1989	Poulsbo	WA	98370	32		6	5	NK	Douglas Road, 17800
63432P	Fiander Water System	7628 Madrona Drive N.E.	Bainbridge Island	WA	98110	8	500	2	2	BI	Yeomalt Point N.E., 11835
54840F	Fille Water System	Po Box 488	Keyport	WA	98345			6	4	NK	Rhododendron Lane N.W., 22595
472145	Finn Hill Water System	917 NW Finn Hill Rd.	Poulsbo	WA	98370	27		4	4	NK	Finn Hill N.W., 917
01190H	Finn Point					42		6	2	NK	Weed Lane
23861B	Fischer Water	792 NW Cedar Lane	Poulsbo	WA	98370	20		0	2	NK	Cedar Lane N.W., 796
359770	Fisherman's Lane	Po Box 524	Silverdale	WA	98383			4	4	NK	Fisherman's Lane Nw, 15514
25581L	Fjordland Water System	24345 Fjord Place NW	Poulsbo	WA	98370	40	10,000	16	14	NK	Fjord Place N.W., 24345
47284Y	Fletcher Bay Water	8671 Battle Point Drive	Bainbridge Island	WA	98110	5	1,100	5	5	BI	Battle Point Drive N.E., 8671
012891	Flora Water	12877 Manzanita RD	Bainbridge Island	WA	98110	33		3	3	BI	Manzanita Road N.E., 12875
257555	Fochtman Water	17408 Nordic Cove Ln. N.W.	Poulsbo	WA	98370	6	2,500	4	2	NK	Nordic Cove LN Nw, 17408
59539T	Follette Water System	25450 Chris Lane NE	Kingston	WA	98346	14		0	2	NK	Chris Ln., 25450

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604207	Fontaine Water System	6591 NW Bondale Lane	Silverdale	WA	98373	32		6	6	CK	Bondale Ln., 6591
436699	Foos Water System	12534 Silverdale Way NW	Silverdale	WA	98383	21		4	4	CK	Silverdale Way, 12542
06595X	Forest Haven No. 1	Po Box 676	E. Olympia	WA	98540	30		6	6	SK	Forest Haven, 5717
083060	Forest Haven No. 2	Po Box 123	Port Orchard	WA	98370	29	0	6	5	SK	Forest Haven Ln, 5717
36601R	Forest Lane Water System	4820 Big Beef Crossing	Bremerton	WA	98312	15	500	6	5	CK	Big Beef Crossing, 4754
070117	Forest Ridge No. 1	P.O. Box 1989	Poulsbo	WA	98370	39		6	5	NK	
07012Q	Forest Ridge No. 2	P.O. Box 1989	Poulsbo	WA	98370	39		6	4	NK	
070138	Forest Ridge No. 3	P.O. Box 1989	Poulsbo	WA	98370	39		6	4	NK	
070159	Forest Ridge No. 4	P.O. Box 1989	Poulsbo	WA	98370	30		6	6	NK	
47399X	Forest Rim	P.O. Box 123	Port Orchard	WA	98366	30		7	7	CK	Grouse Lane, 7910
05374K	Forgotten Gate Lane Hoa	P.O. Box 1989	Poulsbo	WA	98370	30		6	6	NK	Forgotten Gate Ln., 437
007316	Forsman Ridge	P.O. Box 1989	Poulsbo	WA	98370	28		6	6	SK	Forsman Road, 13600
261981	Four Corners Tavern	100 N.W. Wesley Way	Poulsbo	WA	98370			0	1	NK	Hwy 3 N.E., 28071
03278C	Four Wheel Drive					22		4	2	CK	Four Wheel Drive Lane, 2745
587646	Fowler-McFarland	P.O. Box 123	Port Orchard	WA	98366			6	6	CK	Lost Creek Lane N.W., 2483
262753	Fox Cove Water	9220 Fox Cove LN	Bainbridge Island	WA	98110	85		10	9	BI	Fox Cove Lane N.E., 9100
128510	Fox Glove Water System	18365 Diamond Drive NE	Poulsbo	WA	98370	14	1,200	4	5	NK	Fox Glove Lane N.E., 5525
02719X	Foxbridge Bed & Breakfast	30680 Hwy 3 N.E.	Poulsbo	WA	98370	15		1	1	NK	Hwy 3 N.E., 30680
04613U	Fragaria Woods No. 1	P.O. Box 336	Gig Harbor	WA	98335	26		6	6	SK	New Dove Lane SE, 9568
04614B	Fragaria Woods No. 2	P.O. Box 336	Gig Harbor	WA	98335	25		5	5	SK	New Dove Lane SE, 9569
253396	Franklyn Gilbert Water Sys	238 Lofall Road NW	Poulsbo	WA	98370	50		4	4	NK	Lofall Road, 232

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47401L	Fraser Road Water System	10600 S.E. Fraser	Port Orchard	WA	98366	15	1,500	7	6	SK	Fraser Road, 10600
39944X	Freddie Lane	P.O. Box 336	Gig Harbor	WA	98335	54		9	7	CK	Freddie Lane, 8718
075488	Fresh Water Water System	P.O. Box 123	Poulsbo	WA	98370	11	1,125	3	2	NK	Viking Way, 18137
265971	Friends Water Corp	9370 Friends Lane SE	Port Orchard	WA	98366	30		6	6	SK	Friends Lane, 9340
33357K	Frontier Water System	Po Box 1801	Kingston	WA	98346	21		4	5	NK	Old Frontier Road, 11225
03306N	Frontier Woods	5300 NW Newberry Hill Rd, Suite 100	Silverdale	WA	98383	36	0	5	2	CK	Nite Owl Lane N.W., 12501
02003N	Frykholm Water	P.O. Box 1989	Poulsbo	WA	98370	32		5	4	NK	Thorpe Road Ne, 16424
01636P	Gabby Water System	P.O. Box 1989	Poulsbo	WA	98370	31		4	4	NK	Rhododendron Lane N.W., 23014
26940M	Gabe's Water Works Inc	11160 NW Holly RD	Bremerton	WA	98310	10	1,100	9	9	CK	Holly Road N.W., 11130
023623	Gale-Blair	625 Winslow Way East	Bainbridge Island	WA	98110	25		3	3	BI	Agate Point Road N.E., 16410
31491H	Galpin Water Supply	P.O. Box 68	Silverdale	WA	98383	34		9	9	CK	Lupine Lane N.W., 4790
27282V	Gazay Subdivision	23805 Bond RD NE	Poulsbo	WA	98370			3	3	NK	Bond Road, 23805
00705F	Gazay-Mushroom Lane	1275 Thompson Lane	Poulsbo	WA	98370	6	1,000	4	4	NK	Mushroom Lane, 1019
60451H	Gem Water System	P.O. Box 1385	Kingston	WA	98346	19		3	3	NK	Ohio Ave., 26778
45453T	Gen-Don Water System	16710 Agate Pass Rd. N.E.	Bainbridge Island	WA	98110	24		4	4	BI	Agate Pass RD Ne, 16710
275089	Gerke Water	32496 Hoffman RD N	Kingston	WA	98346	45		0	5	NK	Hoffman Road, 32496
27509T	Gerke-McClain Water	1261 SW 152nd ST	Burien	WA	98166			4	4	NK	Hoffman Road N.E., 32428
02543B	Gibb Water System	2123 NW 201st	Seattle	WA	98177	10	2,464	5	3	NK	Rash Road N.E., 29900
37264D	Glentree Water System	9700 Glenwood RD SW	Port Orchard	WA	98367	20		5	5	SK	Glenwood Road S.W., 9700

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28222C	Glenwood Kourt	3048 Christmas Tree LN SW	Port Orchard	WA	98366	20		0	4	SK	Christmas Tree Lane, 2722
37464N	Goldendale Estates	8264 Andrea Lane NW	Silverdale	WA	98383	31		8	8	CK	Andrea Lane NW, 8051
053753	Gracey No.1	P.O. Box 1989	Poulsbo	WA	98370	11	2,500	6	6	NK	Stottlemeyer Rd., 24376
06598F	Gracey Trails 2a	P.O. Box 1989	Poulsbo	WA	98370	4	3,500	5	5	NK	Stottlemeyer
065990	Gracey Trails 2b	P.O Box 1989	Poulsbo	WA	98383	4	3,500	5	5	NK	Stottlemeyer
05846F	Graham Estates	5869 Crystal Springs Dr. NE	Bainbridge Island	WA	98110	6	250	4	2	BI	Crystal Springs Road, 5869
AA265D	Grand Fir	Po Box 1989	Poulsbo	WA	98370	27	0	6	3	NK	Finn Hill Nw, 2675
06270E	Green Gable Estates					25		4	4	NK	State Hwy 104, 7366
NR270L	Green Mountain Horse Camp	P.O. Box 68	Enumclaw	WA	98342			0	1	CK	Green Mountain
076809	Green Mountain Water	Po Box 123	Port Orchard	WA	98366	3	3,500	4	2	CK	Percheron Lane Nw, 227
01589D	Green Spot Water	625 Winslow Way East	Bainbridge Island	WA	98110	28		4	4	BI	Green Spot Place Ne, 9440
398017	Green Stump	11085 Courtney Lane	Poulsbo	WA	98370	26		4	4	NK	Olympic View Road, 10981
01783K	Greene Water System	625 Winslow Way East	Bainbridge Island	WA	98110	3	1,000	2	2	BI	Grand Avenue Ne, 7962 Bi
60781N	Greenshore Homeowners	4648 SE Greenshore Dr.	Port Orchard	WA	98367	7	1,100	10	10	SK	Greenshore Drive Se, 4556
01625X	Greenwood Water System	P.O. Box 336	Gig Harbor	WA	98335	40		8	8	SK	Sidney S.W.,14030
05086F	Grenville/Schmitz	P.O. Box 336	Gig Harbor	WA	98335	28		5	4	SK	Junett Lane, 3290
075298	Guillemot Cove	1200 NW Fairgrounds Road	Bremerton	WA	98312	30	0	3	3	CK	Stavis Bay Road Nw, 19235
08213K	H.A.J. Water System	P.O. Box 123	Port Orchard	WA	98366	19		3	2	SK	NW Old Holly Hill Rd, 24092
04466D	Habnor Estates Water System	P.O. Box 123	Port Orchard	WA	98366	14	1,125	4	1	CK	Corey Lane, 10865
010466	Hagen, Peter Road Well	P.O. Box 1989	Poulsbo	WA	98370	28		6	4	SK	Peter Hagen Road

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02123A	Haley Water System	10580 NE Byron DR	Bainbridge Island	WA	98110	10	300	4	3	BI	Byron Drive, 10580
40651P	Half Mile Road Water	P.O. Box 1961	Silverdale	WA	98383	30		4	4	CK	Half Mile Road N.W., 3525
075235	Halleran Water	Po Box 123	Port Orchard	WA	98366	25	0	4	2	SK	Nelson Road
632458	Hamilton, Earl Water	8445 N.W. Holly Road	Bremerton	WA	98312	25		6	2	CK	Holly Road N.W., 8445
01768M	Hansen/Spellman	5560 NE Sunset Pl	Bainbridge Island	WA	98110	30		6	6	BI	Hansen Road, 8244
31480Q	Harrison Water	50 NW Green Hill Ct	Bremerton	WA	98310	10		0	4	CK	Schold Road N.W., 11660
47264E	Hartstrom Water Supply	P.O. Box 1634	Centralia	WA	98531	31		6	4	CK	Big Bird Drive
01047P	Harvco Water					22		4	4	CK	Segerman Lane, 6986
06785X	Haughton Water System	7980 SE Phillips Road	Port Orchard	WA	98366	20		0	10	CK	Phillips Rd, 7788 SE
368412	Hawk Hill Water System	23410 Rhododendron LN NW	Poulsbo	WA	98370	32		8	8	NK	Rhododendron Lane, 23401
02056H	Hawk/Barlow	9635 NE Dronawood DR	Kingston	WA	98346	15	1,000	3	3	NK	Wyant Road N.E., 9605
05385B	Heavenly Waters	P.O. Box 1989	Poulsbo	WA	98370	4	1,125	6	5	BI	Silven Ave NE , 14413
33775K	Hefner Water System	14644 Peacock Hill Road SE	Olalla	WA	98359	40		0	4	SK	Peacock Hill Road S.E., 14644
47514J	Heins Water System	3380 Rova Road	Poulsbo	WA	98370			6	2	NK	Rova Road N.E., 3380
01775B	Helsene					21		4	4	NK	Hansville Road, 33719
190647	Hemerick Well	15871 Peacock Hill RD SE	Olalla	WA	98359			0	2	SK	Peacock Hill Road S.E., 15871
63441E	Hendel	321 High School Road NE #146	Bainbridge Island	WA	98110	8	1,100	3	3	BI	Sunset Ave. N.E., 11673
11152J	Hendrickson Water System	4945 Henderickson RD NE	Poulsbo	WA	98370	15		0	5	NK	Hendrickson Road, 4945

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067914	Herbold Water System No. 1	2585 SE Bielmeier RD	Port Orchard	WA	98366			3	3	SK	Bielmeier Road S.E., 2585
42460A	Herporusnas Water System	3019 Sawdust Hill	Poulsbo	WA	98370	14		0	4	NK	Sawdust Hill Road N.E., 3018
22486V	Hess, Andrew J. Well	2225 Martin Ave. E.	Port Orchard	WA	98366	18		3	3	CK	Martin Ave., E., 2225
04121D	Hidden Canyon Water System	P.O. Box 1989	Poulsbo	WA	98370	12	1,200	4	2	SK	Long Lake Road, 8090
00911X	Hidden Cove Water	7427 NE Hidden Cove RD	Bainbridge Island	WA	98110	10	5,000	9	9	BI	Hidden Cove Road
004412	Hidden Cove West Water Co	P.O. Box 10854	Bainbridge Island	WA	98110	30		9	9	BI	Hidden Cove Road Ne, 6955
009448	Hidden Heights West	P.O. Box 123	Port Orchard	WA	98366	24		10	8	BI	Hidden Heights Lane, 14008
024247	Hidden Homesteads	P.O. Box 1989	Poulsbo	WA	98307	12	1,200	6	5	CK	Lewis Road
086766	Hide A Way Heights	Po Box 336	Gig Harbor	WA	98335	8	1,400	6	6	NK	Diamond Road, 18751
021364	Hideaway Heights Water	4181 Emerald RD	Poulsbo	WA	98370	9	1,000	4	2	NK	Emerald Road, 4181
06624Q	Highland No. 1 Water System	P.O. Box 123	Port Orchard	WA	98366	30		4	4	SK	Tartan Road E.
066258	Highland No. 2 Water System	P.O. Box 123	Port Orchard	WA	98366	27		6	6	SK	Tartan Road East
651015	Highland View Estates No. 5	450 Coleman Ct.	Poulsbo	WA	98370	32		4	4	NK	Coleman Court N.W., 209 Thomps
60371W	Highland View Water No. 1	P.O. Box 1989	Poulsbo	WA	98370	31		7	7	NK	Thompson Road N.W., 1045
32978A	Hill, Peter J Water	P.O. Box 1252	Poulsbo	WA	98370	8		0	3	NK	Virginia Loop Road,
01165A	Hillside Acres Water	11240 Olympic View RD NW	Silverdale	WA	98383	20	1,000	4	4	CK	Olympic View Road, 11220
300214	Hilltop Water Users	11541 NE Hansen LN	Kingston	WA	98346	15		9	7	NK	Glavin Lane, 11853
30406P	Hinkley Hill Water System	P.O. Box 2985	Silverdale	WA	98383	21	1,400	8	9	NK	Skycrest Lane, 6485
334756	Hintz Water					20		5	5	CK	Seabeck Holly Road, 5325

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03255A	Hite Center Spur Water	P.O. Box 1989	Poulsbo	WA	98370	23		4	4	CK	Hite Center Road, 16111
33635D	Hoggins Water	4570 Lakeview DR SE	Port Orchard	WA	98366	10		0	2	CK	Lakeview Drive S.E., 4570
16342V	Hokanson, Almojuela, Freeman	11170 Anderson Landing LN NW	Silverdale	WA	98383	27		3	3	CK	Anderson Landing LN Nw, 11170
65140N	Holloway Water	4655 Calamity Lane	Bremerton	WA	98312	26		4	4	CK	Calamity Lane, 4645
054691	Holm No. 2 Water System					6	1,150	6	6	CK	Thompson Lane N.E.
04691V	Holm Water System					5	2,400	6	6	CK	Thompson Lane N.E.
72234E	Holman Water System	29478 Beach DR NE	Poulsbo	WA	98370	20		0	3	NK	Beach Drive N.E., 29478
034249	Home Water Supply	14906 Sunrise Dr. N.E.	Bainbridge Island	WA	98110	10	1,100	0	4	BI	Sunrise Drive N.E., 14906
044185	Homer Wiley Water System	P.O. Box 1989	Poulsbo	WA	98370	24		4	2	SK	Phillips Road, 6989
76729N	Hood Canal Assn.	30543 State Hwy 3 NE	Poulsbo	WA	98370			6	3	NK	Hwy 3 N.E., 30503
14766U	Hooper PT Community Water	6320 Eagle Harbor DR NE	Bainbridge Island	WA	98110	12		4	4	BI	Eagle Harbor Drive N.E., 6320
34194V	Hoover Water	16575 Pearson PT RD NE	Poulsbo	WA	98370	50		6	5	NK	Pearson Point Road N.E., 16575
01425N	Huckleberry Water	P.O. Box 336	Gig Harbor	WA	98335	38		6	5	SK	Rosedale Lane S.W., 12036
34750J	Hughes Well	13853 Lester RD N.W.	Silverdale	WA	98383			0	3	CK	Lester Road N.W., 13853
60277V	Hume Water System	16290 Reitan RD	Bainbridge Island	WA	98110			4	4	BI	Reitan Road N.E., 16330
01591J	Hunt 3 Community	P.O. Box 20098	Seattle	WA	98102	19	3,000	16	10	SK	Promenade Lane
051283	Hunter Water	P.O. Box 1989	Poulsbo	WA	98370	19		3	3	NK	Jefferson Beach Road, 22178
638683	Hunt-Newberry Hill	P.O. Box 3863	Silverdale	WA	98383	36		5	5	CK	Caitlin, Off Newberry Hill
35050P	Hurd Water	P.O. Box 63	Olalla	WA	98359	10		0	4	SK	Price Road S.E., 12785

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011784	Hurley Water System	15703 Virginia Loop RD NE	Poulsbo	WA	98370			0	2	NK	Virgina Loop Road N.E., 15703
586895	Hurley, James P.	22077 Clear Creek RD NW	Poulsbo	WA	98370			3	3	NK	Clear Creek Road N.W., 22077
209384	Hurley, Robert	P.O. Box 1303	Poulsbo	WA	98370	10	1,000	0	3	NK	Widme Road, 18447
023074	Hutchins/Spalding	9744 Manley RD NW	Seabeck	WA	98380	25		6	6	CK	Seabeck Hwy., 11174
007379	Hylands Water Co.	P.O. Box 1989	Poulsbo	WA	98370	12	1,150	6	5	NK	Highland Road, 25748
026316	Indianola Woods	P.O. Box 1989	Poulsbo	WA	98370	35		7	6	NK	Marble Lane, 25748
35687V	Ingalls Water System	6310 NE State Hwy 104	Kingston	WA	98346	10	1,125	3	3	NK	Hwy. 104 N.E., 6310
35353M	Iwihhy Inc	6364 NE Tara LN	Bainbridge Island	WA	98110	8		7	7	BI	Sunset Place N.E., 5465
08704F	J&R Water System	25863 Tytler Road NE	Poulsbo	WA	98370	18		4	4	NK	Tytler Road N.E., 25841
314818	J.H. Water System	9552 SW Heartwood Lane	Port Orchard	WA	98366	30		6	5	SK	Jh Road S.W., 920
36490A	Jacobsen Well	2950 Snowhill Lane	Poulsbo	WA	98370	15		0	4	NK	Snowhill Lane
43967M	Jacobson/Brauer Cove	P.O. Box 336	Poulsbo	WA	98370			4	4	NK	Jacobson Road N., 1990
36694M	James Well	5802 Banner RD SE	Port Orchard	WA	98367			4	4	SK	Banner Road S.E., 5802
43837Q	Janet's Well	11104 N.W. Holly Rd.	Bremerton	WA	98312	4	1,000	3	2	CK	Holly Road N.W., 11104
216250	Jason Lane Water	P.O. Box 609	Port Orchard	WA	98366	34		9	9	SK	Jason Lane S.E., 7353
00628D	Jennings Water System	19941 Nilsen Lane N.W.	Poulsbo	WA	98370	10	1,000	4	1	NK	Nilsen Lane NW
367727	Jims Auto Wrecking	18146 9th Ave.	Poulsbo	WA	98370	7		0	3	NK	Stottlemeyer Road N.E., 23719
367748	Joanne Lane Comm Club	1795 Joanne LN NE	Bremerton	WA	98311	25		4	4	CK	Joanne Lane, 1795
06624Q	Johnson Highland	Po Box 123	Port Orchard	WA	98366	30		4	2	SK	Tartan Road

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066258	Johnson Highland No. 2	Po Box 123	Port Orchard	WA	98366	27		6	6	SK	Tartan RD
368834	Johnson Water, Tim	7250 NW Newberry Hill	Silverdale	WA	98383			0	2	CK	Newberry Hill Road
10864N	Johnson, George	11342 Arrow Point DR NE	Bainbridge Island	WA	98110	20		0	3	BI	Arrow Point Drive N.E., 11338
36844L	Johnson-Kingston Terrace	P.O. Box 340	Kingston	WA	98346			0	6	NK	Lindvog Road N.E., 26781
08661B	Johnston Well	7761 Hansen RD NE	Bainbridge Island	WA	98110	22	1,100	9	9	BI	Hansen Road N.E., 7761
16566P	Johnston-Vincent	380101 Hood Canal DR NE	Hansville	WA	98340	5		0	3	CK	Holly Road, 8961
37030A	Jorstad Water	5928 Long Lake Rd. S.E.	Port Orchard	WA	98366			0	3	SK	Long Lake Road S.E., 5940
254271	Judaro	7137 NW Quietview Lane	Silverdale	WA	98383	43		4	4	CK	Willamette Meridian, 9563
37104Q	Judkins, Central Valley	P.O. Box 234	Keyport	WA	98345			0	2	NK	Scandia Road N.W., 76011
65072B	Jungferman Water System	19584 Stavis Bay Road	Seabeck	WA	98380	27		4	4	CK	Stavis Bay Road, 19584
01081M	Jupiter Trail	7285 Jupiter	Silverdale	WA	98383	12	1,100	3	3	CK	Jupiter Trail, 7285
053795	Karkainen	P.O. Box 1989	Poulsbo	WA	98370	17		2	2	NK	Virginia Point Rd. Ne, 16013
019764	Kedros Water System	P.O. Box 1989	Poulsbo	WA	98370	16		9	9	NK	Kedros Lane, 4060
604331	Keeney Water	10044 NE Ewing ST	Bainbridge Island	WA	98110	40		8	8	BI	Ward Ave. N.E., 5711
37917K	Kekamek Subdivision	1753 Kekamek Drive NW	Poulsbo	WA	98370	12	1,100	0	4	NK	Kekamek Drive N.W., 1735
57927W	Kelly Water System	650 SW Spruce RD	Port Orchard	WA	98366	14	1,100	6	2	SK	Spruce Road S.W., 650
017864	Kendall Water System	20829 Pugh Road	Poulsbo	WA	98370	29		6	4	NK	Pugh Road, 20829
634060	Keyport Hills	13913 S. Keyport Road	Poulsbo	WA	98370	31		7	7	CK	State Hwy 303
014266	Keys Water System	28835 NE Oyster PT DR	Poulsbo	WA	98370	24		3	2	NK	Oyster PT Dr
386157	Kimball Water	6810 Sidney Road SW	Port Orchard	WA	98366	7		0	2	SK	Sidney Road S.W., 6820

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38631N	Kindle Ridge	P.O. Box 395	Poulsbo	WA	98370	35		6	9	NK	Ponderosa Place, 1825
42054L	King Road Water System	6606 S.E. King Road	Port Orchard	WA	98366	20		4	4	SK	King Road S.E., 6622
03114M	King Water System	P.O Box 125	Suguamish	WA	98392	10	1,000	4	4	NK	Port Gamble/Suquamish, 23090
023496	King, Carol/Ted Water	Po Box 1989	Poulsbo	WA	98370	26		6	4	BI	Battle Point Road, 10717
42064V	King's Glen	P.O. Box 4094	South Colby	WA	98408			0	8	SK	King Road S.E., 6910
38624Y	Kinkaid Resort Tracts	4735 NE Twin Spits RD	Hansville	WA	98340	9	1,500	3	3	NK	Twin Spits Road N.E., 4805
59889F	Kirk Ave Water	11707 Kirk Ave.	Bainbridge Island	WA	98110			9	9	BI	Kirk Avenue, 11701
424502	Kitsap Bait Sales	1595 SW Hwy 160	Port Orchard	WA	98366			2	2	SK	State Hwy 166, 1595
086890	Kitsap County Sp No. 2249	P.O. Box 173	Southworth	WA	98386			0	2	SK	Banner Road S.E., 9555
426402	Kitsap Youth Home-Central	1200 Navy Yard Hwy	Bremerton	WA	98312	14		0	1	CK	Anderson Hill Road NW, 5100
36784H	Klabon Water System	P.O. Box 383	Seabeck	WA	98380	13	1,000	8	8	CK	Bonkla Lane N.W., 14129
01093X	Klahowya	6574 Schuett LN NW	Bremerton	WA	98312	31		9	8	CK	Schuett Lane, 6561
074339	Klahowya Homestead	Po Box 123	Port Orchard	WA	98366	37	0	6	5	CK	Calumet Dr. Nw, 7997
042011	Klineburger Water	14406 Olympic View Loop NW	Silverdale	WA	98383	3	1,000	0	3	CK	Olympic View Road, 14451
63566N	Klinger Water System	P.O. Box 1165	Kingston	WA	98346	30		4	4	NK	State Hwy 104, 9343
02175M	Knauss Water System	5366 Seabeck Hwy. N.W.	Bremerton	WA	98312	28		3	3	CK	Seabeck Hwy. N.W., 5320
36777T	Knopf, Eric Water System	P.O. Box 163	Poulsbo	WA	98370	28		4	2	NK	Hallman Road, 17280
03926Y	Kolvoord	P.O. Box 1989	Poulsbo	WA	98370	21		4	1	NK	Hudson Avenue NE, 29941

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04881V	Komichan Water System					28		6	6	CK	Feather Lane
06840E	Kortetz Water Supply	22650 Rhododendron Lane	Poulsbo	WA	98370	15	200	0	2	NK	Rhododendron Lane N.W., 22662
01701F	Krick Joel	6371 Longlake RD SE	Port Orchard	WA	98366			0	8	SK	Long Lake Road S.E., 6371
04860U	Kruger Water System	7411 SE Sedgwick RD	Port Orchard	WA	98366	15	1,100	4	2	SK	Sedgwick Road, 7411
06702A	Kudzu Water	P.O. Box 123	Port Orchard	WA	98366	25		4	3		15592 Stevens Road
15440W	Kvinsland, Norbur & Hall	23150 Big Valley Road	Poulsbo	WA	98370	30		0	3	NK	Big Valley Road, 24906
00538J	Kwip Water Supply	13527 Wye Lake Blvd SW	Port Orchard	WA	98366	12		4	4	SK	Wye Lake Blvd. S.W., 13617
01074X	L&M Of Glenwood	12810 Glenwood Road	Port Orchard	WA	98366	22		4	4	SK	Glenwood Road, 12824
024941	L.C.D. Water System					25		4	4	SK	View Park Road, 9238
06499V	La Cachette Water	P.O. Box 1989	Poulsbo	WA	98370	25		1	1	CK	Seabeck Hwy, 10312
43455P	La La Cove	13001 La La Cove Ln. S.E.	Olalla	WA	98359	25	8,000	23	11	SK	La La Cove Lane, 13113
32434K	Lagoon Water District	4929 N.E. Tolo Road	Bainbridge Island	WA	98110	5	1,000	3	3	BI	Tolo Road N.E., 4919
588017	Lakeness Community Well	3108 N.W. Lakeness Road	Poulsbo	WA	98370	10	1,100	6	6	NK	Lakeness Road, 3108
063797	Lakeside Apartments	6650 Long Lake RD	Port Orchard	WA	98366			0	6	SK	Long Lake Road, 6650
068282	Lamagna					26		6	4	NK	NW Lutes Rd, 1836
436950	Landsworth Creek Water	11561 Clear Creek RD	Silverdale	WA	98383	27		4	4	CK	Clear Creek Road, 11549
009279	Lane Water System	17130 Clear Creek RD NW	Poulsbo	WA	98370	10		0	2	NK	Clear Creek Road N.W., 17130
00531X	Lang Water	P.O. Box 685	Port Orchard	WA	98366	13	1,400	4	3	SK	East Hillcrest Dr., 5252
23910N	Lang Water System	4450 Woods Road S.E.	Port Orchard	WA	98366	20		5	4	SK	Woods Road, 4391

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459605	Langley Water	4793 Seabeck Hwy NW	Bremerton	WA	98310			0	3	CK	Seabeck Hwy. N.W., 4793
01039F	Larson Lane No. 1	P.O. Box 1989	Poulsbo	WA	98370	29		6	4	CK	Cheyney Lane, 6616
05824X	Larson Lane No. 2 Water System	P.O. Box 1989	Poulsbo	WA	98370	28	0	6	5	CK	Cheney Lane, 6466
46117H	Larson Water	P.O. Box 833	Seabeck	WA	98380	12		4	4	CK	Seabeck Hwy NW, 5757
025209	Laurelwood					30		5	4	BI	Frey Ave., 5652
03464A	Lavalsit Water System	27691 Lindvog RD	Kingston	WA	98346	10	2,500	4	3	NK	Lindvog Road, 27691
46385J	Lawler Water	13422 Olympic DR SE	Olalla	WA	98359	10		0	2	SK	Olympic Drive S.E., 13422
472860	Lawrence Dr. Water System	9373 Lawrence Dr. S.E.	Port Orchard	WA	98366	36		9	9	SK	Lawrence Drive SE
65067N	Lazy Brook Farm	7780 Sportsman Club RD NE	Bainbridge Island	WA	98110	7	1,100	4	4	BI	Sportsman Club Road, 7756
68310B	Lee Memorial Water Assn	3230 Point White Drive NE	Bainbridge Island	WA	98110	21		6	6	BI	Point White Drive N.E., 3211
54639L	Lee Water System	16443 Olympic View RD	Silverdale	WA	98383			3	2	CK	Olympic View Road, 16443
004686	Lee-Bo Water	20421 Pugh Rd. NE	Poulsbo	WA	98370	29		4	4	NK	Pugh Road, 20421
02476J	Leisure Land Water System	3139 21st Street	Clarkston	WA	99403	73		6	3	CK	Aviator Lane NW, 4854
02992M	Leisureland Division 1					31		6	6	CK	Holly Road
43576V	Lemmon Water System	P.O. Box 986	Poulsbo	WA	98370	22		4	4	NK	Clear Creek Road N.W., 23485
46727J	Lemolo Meats	P.O. Box 1989	Poulsbo	WA	98370			0	4	NK	Lemolo Shore Drive N.E., 17158
26629C	Lemolo Tracts	1670 N.E. Jacobson Road	Poulsbo	WA	98370	15	1,000	9	9	NK	Jacobson Road N.E., 1670
35994Y	Leon's Well	1505 NW Mushroom LN	Poulsbo	WA	98370	22		4	3	NK	Mushroom Lane, 1505 (Open Space)
06501J	Lewis Water	7460 N.E. North Street	Bainbridge Island	WA	98110	12		0	4	BI	Agate N.E., 17026

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63439A	Lewis Water System	21354 Indianola Road	Poulsbo	WA	98370	20		4	2	NK	Indianola Road N.E., 21354
436826	Liberty Point Water	19724 Baron Ln. NW	Poulsbo	WA	98370	35		9	7	NK	Liberty Road N.W., 1104
01206D	Liberty Ridge Supply	19737 Valence LN NW	Poulsbo	WA	98370	26		3	3	NK	Valence Lane NW, 19721
25994X	Lider Water System	P.O. Box 336	Gig Harbor	WA	98335	44		10	10	SK	Lider Road S.W., 685
66934K	Lightmoor	P.O. Box709	Keyport	WA	98345	9		6	6	BI	Lightmoor Court, 8415
364802	Lillehei-Jackson Water	Po Box 2396	Port Orchard	WA	98366	40		5	6	SK	Lillehei Lane, 10152
47282X	Lincoln Heights Water	20900 NE Melson LN	Poulsbo	WA	98370	30	2,500	12	12	NK	Melson Lane N.E., 20897
359815	Lincoln Squire Hollow	P.O. Box 826	Poulsbo	WA	98370	35		6	2	NK	Lincoln Road N.E., 2522
16814R	Lindblad, Howard	37321 Olympic View RD NE	Hansville	WA	98340	15	2,500	5	5	NK	State Hwy. 104 N.E., 6810
60877M	Little Beef Creek Water Co	P.O. Box 299	Seabeck	WA	98380	27		4	2	CK	Seabeck Hwy., 11530
610554	Little Manzanita Water	6801 Bergman Road	Bainbridge Island	WA	98110	3	5,000	4	2	BI	Bergman Road
63424F	Little, Crista Water	16212 Reitan Road NE	Bainbridge Island	WA	98110	30		4	4	BI	Reitan Road N.E., 16224
47560R	Littlewood Water System	P.O. Box 709	Keyport	WA	98345	8	1,000	9	8	CK	Littlewood Lane, 6005
47622W	Living Waters	6524 Middle ST N.E.	Suquamish	WA	98392	13	500	3	3	NK	Middle Street, 6524
432899	Lml Water System	4397 Trillum Road	Bremerton	WA	98312		1,500	0	3	CK	Kid Haven Lane NW, 4397
47635P	Lobdell Water Association	P.O. Box 151	Kingston	WA	98346	10		0	8	NK	Ohio Avenue N.E., 27319
02221D	Locker Duplex Water	1400 NW 201st ST	Seattle	WA	98177	20		0	4	SK	Locker Road S.E., 3329
HD420E	Lofall Maintenance	8293 Spring Creek RD SE	Port Orchard	WA	98366	10		1	1	NK	Hwy 3 Nw, 26611
02358X	Lofall No. 1					31		6	5	NK	Lofall Road NW, 26532

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47669J	Lofthus Water	15529 Washington Ave NE	Bainbridge Island	WA	98110			0	2	BI	Birkland, 4045
476747	Logan Water	P.O. Box 188	Seabeck	WA	98380	23	4,850	6	4	CK	Seview Drive, 14879
009047	Lois Drive No. 1	6878 NW Lois DR	Silverdale	WA	98383	28		6	6	CK	Lois Drive, 6889
00584R	Lombard, Ray Water	5168 NW Uff Da Lane	Silverdale	WA	98383	40		6	6	CK	Uff Da Lane, 5010
05378M	Lone Eagle	P.O. Box 1989	Poulsbo	WA	98337	25		6	4	BI	Rose Ave. NE, 5115
479208	Lone Rock Grocery	11195 Seabeck Highway NW	Seabeck	WA	98380			0	2	CK	Seabeck Hwy, 11195
47925U	Lone Rock Water Assn	11005 Warren Road NW	Silverdale	WA	98383			18	13	CK	Warren Road N.W., 11005
474760	Lonesome Water System	7456 Vandecar Road S.E.	Port Orchard	WA	98366			5	2	SK	Bielmeire Road, 7495
48025Q	Long Lake Manor Water	P.O. Box 1165	Port Orchard	WA	98366	26		6	4	SK	Long Lake Road S.E., 7242
480627	Longfellow Park	4133 Lakeview Ave N.W.	Bremerton	WA	98312			9	8	CK	N.W. Lakeview Place, 4125
894747	Longo, L Water	7905 Banner RD SE	Port Orchard	WA	98366	30		0	2	SK	Banner Road, 7905
15481E	Lords Property	629 N State Hwy 90 Byp 1031	Sierra Vista	AZ	85635-2257	15		0	2	SK	Crescent Valley S.E., 14381
048745	Lost Creek Lane Water System	P.O. Box 123	Port Orchard	WA	98366	28		6	6	CK	Lost Creek Lane, 2483
48375D	Lots Of Bucks	P.O. Box 265	Olalla	WA	98359	27		0	2	SK	Nelson Road S.E., 7510
324419	Ludwick Supply	P.O. Box 464	Olalla	WA	98359	24		5	4	SK	Banner Road, 12261
48934M	Luquasit Water Assn	P.O. Box 1082	Silverdale	WA	98383	28		8	8	CK	Luquasit Trail N.W., 5971
06524L	Lusby Lane	Po Box 123	Port Orchard	WA	98366	14	1,400	6	5	CK	Lusby Lane, 16645
04729A	Lustbader-Preston	P.O. Box 1989	Poulsbo	WA	98370	6	3,500	4	4	BI	Manzanita Road Ne, 13183
63361U	Lutes Road Water	1900 Lutes Road NW	Poulsbo	WA	98370	12		2	2	NK	Lutes Road, 1910
25440X	Lws System No. 1	2580 NW Sherman Hill RD	Poulsbo	WA	98370	15	1,000	6	5	NK	Sherman Hill, 2580

PWS ID	System Name	Mail Address	Mail City	Mail State	Mail Zip	Well Pump	Stor	Conn App	Conn Curr	Loc	Road Address
204646	M&A Water System	7450 Nelson Road	Olalla	WA	98359	30		6	4	SK	Nelson Road Se, 7450
63701T	Mace Lake Water	Po Box 523	Olalla	WA	98359	25		6	6	SK	Mace Lake Lane, 5192
038553	Madrona Beach Estates	P.O. Box 1989	Poulsbo	WA	98370	28		6	3	NK	State Hwy 305 NE, 16586
50220X	Madrona Water Co	7230 Madrona DR NE	Bainbridge Island	WA	98110	12	10,000	14	14	BI	Madrona Drive N.E., 7268
017843	Malazzo Water System	P.O. Box 336	Gig Harbor	WA	98335	31		9	9	SK	Wyckoff Road Sw, 440
50710A	Mandak-Jackson-Hall Water	P.O. Box 686	Silverdale	WA	98383	15		0	3	CK	Ioka Way NW, 11745
017885	Manual Road	14646 Sivertson Road	Bainbridge Island	WA	98110	12	2,700	4	4	BI	Carene Lane, 7500
05382T	Manzanita Road	13834 Manzanita Rd. NE	Bainbridge Island	WA	98110	19		3	3	BI	Manzanita Rd. NE
19501R	Maple Ridge	9821 Echo Valley Road NW	Bremerton	WA	98312	40		4	4	CK	Echo Valley Road N.W., 9821
066005	Marcad Water	Po Box 1989	Poulsbo	WA	98370	34		6	6	CK	Old Sawmill
047910	Margo Water System	Po Box 123	Port Orchard	WA	98366	21		4	4	SK	Oakhurst Lane, 4730
03858M	Marlow Water	P.O. Box 1989	Poulsbo	WA	98370	35		14	10	CK	Millgalde Lane
51849X	Marshall Water (Fragaria)	8971 SE Fragaria RD	Olalla	WA	98359			0	2	SK	Fragaria Road S.E., 8725
11682Y	Marshall/Field Water Syst.	3219 Point White DR NE	Bainbridge Island	WA	98110	14		0	3	BI	Point White Drive N.E., 3219
00576J	Martha Lane Water System	3903 NW Martha Lane	Silverdale	WA	98383	29		5	4	CK	Martha Lane, 3877
51885W	Martinson Water	13410 Phelps Road	Bainbridge Island	WA	98110			0	3	BI	Phelps Road N.E, 13410
015228	Masada Water System	P.O. Box 1989	Poulsbo	WA	98370	28		4	4	NK	England Lane Nw, 1915
59966J	Mason Road Water	24680 Mason Road	Poulsbo	WA	98370			4	4	NK	Mason Road, 24700
035145	Mason Water System	8639 Olalla Valley RD SE	Port Orchard	WA	98366	24		0	2	SK	Olalla Valley Road S.E., 8639

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02427R	Mason, Tim Water System	P.O. Box 1989	Poulsbo	WA	98370	5	500	4	2	NK	Weed Lane, 3193
37144R	Matejka Garden Tracts	P.O. Box 124	Gig Harbor	WA	98335	31		6	3	SK	Nelson Road S.E., 5710
00700W	Mathews Water	37120 Thors Road NE	Hansville	WA	98340	31		9	8	NK	Thors Road, 37120
523607	McFarland Well	4538 Old Mill RD NE	Bainbridge Island	WA	98110			0	4	BI	Old Mill Road N.E., 4538
01781J	McFarlane Water System	7266 NE Little Harbor Lane	Bainbridge Island	WA	98110	12	500	4	2	BI	Little Harbor Lane NE, 7266
03277V	McKeel	3702 14th Ave. NW	Gig Harbor	WA	98335	30	0	6	5	CK	Mathisen Lane, 3750
843250	McKeever Water System	7020 N.E. Dolphin Dr.	Bainbridge Island	WA	98110			6	6	BI	
526656	McKenzie Water System	3175 PT White DR NE	Bainbridge Island	WA	98110			0	2	BI	Point White Drive N.E., 3175
79730F	Meadowview Homeowners Assc	11554 Doyle Lane N.W.	Silverdale	WA	98383	30	5,000	8	6	CK	Doyle Lane, 11554
02639A	Merlins Well	P.O. Box 1989	Poulsbo	WA	98370	21		4	4	CK	Merlins Lane N.W., 10188
084212	Merriman	Po Box 123	Port Orchard	WA	98366	30	0	6	1	SK	Menzies Rd, 3536
03576Q	Mew Water System	P.O. Box 1989	Poulsbo	WA	98370	26		5	4	CK	Hintzville Raod, 17825
63229T	Michaelieu Water	10224 N. 40th Ave.	Phoenix	AZ	85051			2	2	NK	Sherman Hill Road, 1283
04242K	Miguelo	P.O. Box 1989	Poulsbo	WA	98370	27		4	4	CK	Klahowya Trail
328111	Mikes Water System	23255 Rhododendron Lane NW	Poulsbo	WA	98370	29		4	4	NK	Rhododendron Lane, 23255
546829	Miller Bay Water System	Po Box 156	Suquamish	WA	98370	15		0	5	NK	Sid Price Road N.E., 6725
017318	Miller Road Water	P.O. Box 138	Hansville	WA	98340	20	500	9	7	NK	Eagle Point Lane, 8162
55200	Minterbrook Farms	P.O. Box 2	Burley	WA	98322	32		0	5	SK	Minterbrook Road S.W., 2033
552353	Mirical Water System	4725 Banner RD SE	Port Orchard	WA	98366	30		4	4	SK	4630 Arvick rd

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552902	Misery Point Homeowners	10086 Misery PT RD	Seabeck	WA	98380	43		7	6	CK	Misery Point Road, 10086
553505	Mission View Estates	2710 Ridge Crest DR W	Bremerton	WA	98312	15	5,000	0	8	CK	Mission Lake Road W, 2792
473695	Montana Well Association	10719 Old Frontier Road	Silverdale	WA	98383	15	1,000	4	4	CK	Old Frontier Road
16911B	Montgomery	8150 Willock RD	Olalla	WA	98359			0	2	SK	Willock Road, 8150
19659A	Moore Oak	Po Box 78	Gig Harbor	WA	98335	30		9	9	SK	Oak Road, 890
03889X	Moran Water	9396 Moran RD NE	Bainbridge Island	WA	98110			3	3	BI	Moran Road N.E., 9402
031324	Morgensen/Mt View Road					30		3	3	CK	Mt View Road, 1335
998506	Morris Water	66 Peter Hagan Rd. N.W.	Bremerton	WA	98312			0	3	CK	Peter Hagen Road, 58
05845Y	Morrison	280 Madison Ave N	Bainbridge Island	WA	98110	7	2,500	7	5	BI	Ferncliff Ave NE & NE Yaquina Ave.
473128	Mpvk Water System	P.O. Box 2985	Silverdale	WA	98383	10	1,200	9	9	CK	Hintzville Road N.W., 17521
57469A	Mueller's Larry Water Sys	16669 Brauer RD NE	Poulsbo	WA	98370			0	2	NK	Hallman Road N.W., 16865
01241V	Muller Water System	P.O. Box 504	Poulsbo	WA	98370	15		0	2	NK	Clear Creek RD Nw, 17335
068261	Muller-Fladgard	P.O. Box 1989	Poulsbo	WA	98370	28		6	3	NK	NE 360th
00433U	Murphys	8125 Sportsmans Club Rd.	Bainbridge Island	WA	98110	15	1,100	4	4	BI	Sportsman Club Road, 8117
576706	Murray Park Beach Club	7554 Long Lake RD SE	Port Orchard	WA	98366			0	7	CK	Long Lake Road, S.E., 7570
00241T	Mushroom Lane Water	1915 NW Mushroom Lane	Poulsbo	WA	98370	30		4	4	NK	Rhododendron Blvd.
253523	Myers Well	3633 Sagebrush Lane	Bremerton	WA	98312	28		3	3	CK	Sagebrush Lane, 3633 & 3651
10998M	Nack Water System	3496 SE Olalla Burley RD	Olalla	WA	98359	21	1,350	8	7	SK	Olalla Burley Road, 3496
032283	Nathan's	P.O. Box 1989	Poulsbo	WA	98370	12	1,500	3	3	NK	NE Orseth Rd, 4797

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06626R	Nelson Highland	Po Box 123	Port Orchard	WA	98366	21		4	2	SK	Moonridge Lane
06626R	Nelson Highland Water System	P.O. Box 123	Port Orchard	WA	98366	27		4	2	SK	Moonridge Lane SE
587770	Nelson Water	20365 Pugh Rd.	Poulsbo	WA	98370	9		0	6	NK	Pugh RD Ne, 20031
02244F	Nelson, Ryan Water	P.O. Box 336	Gig Harbor	WA	98335	28		6	6	SK	Nelson Road S.E., 4741
01515J	Nelson-Bandix Road Water	641 Bay Street	Port Orchard	WA	98366	14	1,400	6	6	SK	Bandix Road, 13311
009807	Nesika Bay No. 4	P.O. Box 1989	Poulsbo	WA	98370	30		7	7	NK	Lemolo Shores Drive, 15976
36491U	New Haven Lane	7711 New Haven Land NW	Silverdale	WA	98383	21		9	7	CK	New Haven Lane N.W., 7711
064482	Newbeck Water System	5070 Tracyton Blvd.	Bremerton	WA	98311	33		1	1	CK	Newberry Hill Road, 8802
12877L	Newberry Hill Community	8155 Berryridge Lane NW	Silverdale	WA	98383			9	9	CK	Berry Ridge Lane N.E., 6100
00626C	Newsprings Water System	P.O. Box 1989	Poulsbo	WA	98337	11	1,400	6	5	CK	Lakeview Ave., N.W., 4670
100444	Nicholson Well	3405 SE Kemp Lane	Port Orchard	WA	98366	20		0	2	SK	Kemp Lane S.E., 3405
016377	Nickerson, Charles Water	P.O. Box 1989	Poulsbo	WA	98370	12	1,050	3	3	NK	Glavin Lane, 11753
36773Q	Noll Road Water System	P.O. Box 2985	Silverdale	WA	98383	23		4	4	NK	Noll Road, 19811
374213	Norris Sp 615 Water System	6523 NE My Way	Bainbridge Island	WA	98110	10	2,200	4	3	BI	My Way, 6529
59985J	Norris Supply	6350 E Beaver CR RD	Port Orchard	WA	98366			0	8	SK	Kimble, 4405
04605L	North Kitsap Business Park					25		5	4	NK	3203 Totten Rd., Poulsbo
033625	North Lindvog Water System	P.O. Box 1989	Poulsbo	WA	98370	9	500	4	3	NK	Lindvog Road Ne, 27777
608809	North Ollala Water	13737 Banner RD SE	Olalla	WA	98359	35		0	4	SK	Banner Road S.E., 13729

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065233	Northslope	P.O. Box 725	Seabeck	WA	98380	13	1,350	6	5	CK	Christine Lane, 3906
62100E	Northwood	P.O. Box 709	Keyport	WA	98345	50		9	14	NK	Lamms Lane
473719	Null Water System	9030 Elim ST	Anchorage	AK	99507	14	1,100	5	5	SK	Bandix Road S.E., 13251
299313	Oakhurst Water Company	9245 Antrium Lane SW	Port Orchard	WA	98366	31		9	9	SK	Oakhurst Lane S.W., 4610
62796M	Oas Water	1803 NW Pioneer Hill RD	Poulsbo	WA	98370	10		0	2	NK	Pioneer Hill Road N.W., 1803
003389	Olalla Gardens Water	P.O. Box 975	Olalla	WA	98359	40		9	4	SK	Banner Road S.E., 13701
01956L	Olallie Water Sysem	Po Box 123	Port Orchard	WA	98366	30		2	2	BI	Olallie Lane
10224V	Old 196 Water System	8283 N.W. Holly Road	Bremerton	WA	98312	24		4	4	CK	Holly Road
205711	Old Frontier Road	11634 Old Frontier Rd.	Silverdale	WA	98383	9		0	4	CK	Old Frontier Road, 11634
05785V	Old Sawmill Place	Po Box 78	Gig Harbor	WA	98335	23		4	4	CK	Old Sawmill Place
199375	Olson Springs	17390 Clear Creek Road NW	Poulsbo	WA	98370			0	4	NK	River Lane NW, 3102
022938	Olson Water System	P.O. Box 1989	Poulsbo	WA	98370	20		3	3	CK	Critter Creek Lane, 13633
07916Y	Olson, Thomas Water	Po Box 1989	Poulsbo	WA	98370	35	0	5	4	NK	NW Pioneer Hill Rd, 550
030552	Olympic Drive Water System	13616 Olympic Drive SE	Olalla	WA	98359	4	500	5	5	SK	Olympic Drive, 13512
36725F	Olympic Mountain Water	15174 Orweiler RD	Poulsbo	WA	98370	8	1,000	4	3	NK	Orweiler Road, 15440
63698L	Olympus Beach Water	9701 Olympus Beach Rd. NE	Bainbridge Island	WA	98110	25	5,000	8	7	BI	Battle Poimt Rd, 9681
02390U	On A Clear Day No. 1	P.O. Box 1989	Poulsbo	WA	98370	36		5	4	NK	See Forever Lane Ne, 5268
02391B	On A Clear Day No. 2	P.O. Box 1989	Poulsbo	WA	98370	36		6	5	NK	See Forever LN Ne, 5268
04465W	One Mile Road	P.O. Box 1989	Poulsbo	WA	98370	35		6	4	CK	One Mile Road, 16828
06631E	O'neill	31109 Baltic Lane NE	Poulsbo	WA	98370	15		0	2	NK	Baltic Lane N.E., 31109

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03852J	Onorato	Po Box 1989	Poulsbo	WA	98370	20	1,000	8	8	BI	Tolo Road NE, 5817
01909V	Orseth Water System	4792 Orseth RD	Poulsbo	WA	98370	35		6	4	NK	Orseth Lane, 4784
26131V	Orweiler Water System	3055 NW Colonial LN	Poulsbo	WA	98370	33		8	8	NK	Cheryle Lane N.W., 15560
63829K	Oslo Lane Water System	12218 Oslo Lane NW	Silverdale	WA	98383	28		4	3	CK	Oslo Lane N.W., 12186
611579	Otter Water Company	30188 Scenic Drive	Poulsbo	WA	98370	23	2,500	5	5	NK	Scenic Drive N.E., 30188
06271Y	Our Town Water System	P.O. Box 1989	Poulsbo	WA	98370	24		4	4	SK	Willow Road S.E.
00922P	Our Water System	27932 Hwy 104 N.E.	Kingston	WA	98346	31		5	4	NK	Hwy. 104 N.E., 27932
33603L	Over The Hill Water	P.O. Box 1689	Kingston	WA	98346	12	1,000	8	8	NK	Galvin Lane N.E., 11953
00587A	Overra Road No. 1 Water	P.O. Box 336	Gig Harbor	WA	98335	35		6	6	SK	Overra Road SE, 7327
01333R	Overra Road No. 2	P.O. Box 336	Gig Harbor	WA	98335	37		6	3	SK	Patrosa Lane Se, 6104
65058X	Owens, J Water	19368 Noll RD NE	Poulsbo	WA	98370	11		0	4	NK	Noll Road N.E., 19368
04218W	Owens, Lee	P.O. Box 123	Port Orchard	WA	98366	30	500	6	6	SK	Bethel-Burley, 15424
650623	Owens-Rowland Water System	925 NW Cedar Lane	Poulsbo	WA	98370	15		3	3	NK	Cedar Lane N.W., 863
37471C	Owenwood Water System	P.O. Box 709	Keyport	WA	98345	30		9	6	NK	Seminole Road, 16827
60679D	Oyster Point Road	473 Oyster Point Drive	Poulsbo	WA	98370	4	1,100	4	3	NK	Oyster Point Road, 28763
07276L	Pacific Coast Evergreen	Po Box 727	Port Orchard	WA	98366	15		6	0	SK	Bethel Road Se, 5158
76960A	Pacific Sound Resources	Po Box 610	Seattle	WA	98109		1,150	0	8	CK	Seabeck Hwy, 14826
29921U	Pacific Ventures	P.O. Box 336	Gig Harbor	WA	98335	12	1,500	4	8	SK	Nelson Road
01167B	Paradise Cove	30226 Parcell Road	Kingston	WA	98346	15	1,000	7	7	NK	Parcells Road NE, 30214
661439	Park Place Water Company	13074 Manzanita RD NE	Bainbridge Island	WA	98110	10		0	3	BI	Manzanita Road, 13088

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662145	Parkview Christian Light	810 S.W. Wildwood RD	Port Orchard	WA	98366			1	1	SK	Wildwood Road S.W., 1450
01095Y	Patrosa Lane	P.O. Box 336	Gig Harbor	WA	98335	25		6	6	SK	Patrosa Lane, 6155
37396B	Paul's Lakeside Water	15444 Sidney RD SW	Port Orchard	WA	98367	27		4	4	SK	Sidney Road S.W., 15444
43786C	Paulson Road Water	10391 Jubilee Lane N.W.	Poulsbo	WA	98370	21		4	4	NK	Jubilee Lane NW, 10377
011974	Peabody Water	625 Winslow Way East	Bainbridge Island	WA	98110	12	1,350	6	3	BI	Morgan Ave., 5248
000000	Pending Public Water System										
02332A	Peninsula Terrace Water	P.O. Box 135	Kingston	WA	98346	13	1,200	0	4	NK	Berry Street NE, 10124
063396	Pennock	P.O. Box 1989	Poulsbo	WA	98370	19		3	2	NK	Brauer Road, 16735
02941U	Pete Bog	P.O. Box 1989	Poulsbo	WA	98370	30		6	6	SK	Burchard DR SE
671354	Peters Water	14410 Tall Firs Ln.	Port Orchard	WA	98367	30		6	6	SK	Tall Firs Lane, 14410
058470	Peters/Beebe					21		2	2	NK	State Hwy 104, 28262
30001L	Peterson Water System	3807 Edgewood Dr.	Vancouver	WA	98661	12	1,500	4	4	SK	Nelson Road S.E., 6809
49700L	Peterson Water System	5255 Bethel Ave	Port Orchard	WA	98366			0	3	SK	Bethel Avenue, 5255
67398F	Pine Lake M/H Est 4	7910 Stinson Ave	Gig Harbor	WA	98335	56		23	14	CK	Pine Lake Blvd SE, 4869
45507P	Pinewood Water System	P.O. Box709	Keyport	WA	98345			5	3	NK	Port Gamble/Suqamish Rd.,22290
677075	Pinsch Water System	1184 N.W. Barker Creek Road	Bremerton	WA	98311	30		0	3	CK	Barker Creek Road NW, 1184
67710T	Pioneer Acres	P.O. Box 709	Keyport	WA	98345	35	5,000	14	14	NK	Lassie, 1599
01892E	Pioneer Hill Estates	P.O. Box 1989	Poulsbo	WA	98370	40		6	4	NK	Pioneer Hill Road
43653X	Pioneer Ridge Water	5834 Rim View Court NW	Bremerton	WA	98312	27		6	5	CK	Rim View Court N.W., 5834
00887P	Piper	P.O. Box709	Keyport	WA	98345	14	1,000	9	9	BI	Tolo Road N., 4795

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65260A	P-L Water System Assn	12310 Olympic View RD NW	Silverdale	WA	98383	9	1,250	4	4	CK	Olympic View Road, 12238
009427	Pleasant Lane Water	P.O. Box 10755	Bainbridge Island	WA	98110			0	3	BI	Pleasant Lane N.E., 7947
017339	Point Of View Water System	P.O. Box 1989	Poulsbo	WA	98370	10	1,000	9	9	CK	Catherine Drive
684152	Ponderosa Water	15190 Horseshoe Ave. S.W.	Port Orchard	WA	98366	16		0	4	SK	Lake Street S.W. 1167
82250X	Port Orchard Airport Cafe	11221 Pacific Hwy S.W.	Tacoma	WA	98499			0	3	SK	Sidney Road S.W., 12292
68880T	Port Orchard S.D.A. Church	P.O. Box 95	Southworth	WA	98386	20		2	1	SK	Bethel Road S.E., 5000
038574	Porta Westfalica	P.O. Box 1989	Poulsbo	WA	98370	32	1,300	5	5	NK	Orweiler Lane N.W., 15680
00209W	Potter Water Too	12339 Clear Creek Road	Silverdale	WA	98383			2	2	CK	Clear Creek, 12339
169815	Potter, J G	12339 Clear Creek RD NW	Silverdale	WA	98383			0	3	CK	Clear Creek Road N.W., 12339
40433Y	Poulsbo West Water System	P.O. Box 1989	Poulsbo	WA	98370			7	7	NK	Joseph Lane N.W.
014646	Poverty Ridge	P.O. Box 1989	Poulsbo	WA	98370	22		3	3	SK	Fraser Road, 10917
69155R	Powell Water	9575 Radcliff Road	Bremerton	WA	98311	15		0	4	CK	Radcliff Ave NE, 9575
692655	President Point Water	Po Box 1973	Kingston	WA	98346	15		0	4	NK	Jefferson Beach RD N.E., 22306
69329A	Price Water	34139 Bridgeview DR NE	Kingston	WA	98346			0	3	NK	Sid Price Road N.E., 6710
54626T	Prince Pine Water	P.O. Box 693	Silverdale	WA	98383			9	9	CK	Prince Pine Lane
19926C	Puget Bluff Lane Water	10421 NE Puget Bluff Ln.	Bainbridge Island	WA	98110		1,190	7	6	BI	End Of Puget Bluff Lane
32741N	Puget Vista Water System	12878 N.E. Mary Lou Lane	Kingston	WA	98346	35		8	6	NK	Jefferson Beach Road, 22176
133370	Pugh C G	P.O. Box 2938	La Pine	OR	97739	60		9	9	NK	Brite Star Lane, 4455

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02442P	Pugh Road Water System	P.O. Box 1989	Poulsbo	WA	98370	42		6	3	NK	Pugh Road, 20256
63579F	Puma Lane Water Assoc.	22383 Puma LN NE	Poulsbo	WA	98370	43		7	7	NK	Puma Lane N.E., 22384
02280E	Purbaugh Water System	Po Box 780	Silverdale	WA	98383	34		5	4	NK	Erickson Lane
375407	Quail Hollow Water System	8207 Graystone Way NW	Silverdale	WA	98383	28		4	4	CK	Graystone Way N.W., 8205
03785Q	R.J. Water System					11	1,000	6	6	NK	Pugh Road,
706401	Raber Additon Assoc Water	P.O. Box 10273	Bainbridge Island	WA	98110			0	3	BI	High School Raod N.E., 10082
054736	Rainforest Greenhouse Water System	P.O. Box 336	Gig Harbor	WA	98335	29		6	5	SK	County Line Road, 3635
04323P	Rainier Meadows	P.O. Box 336	Gig Harbor	WA	98335	28		6	4	SK	Collins Road E, 5686
47436Y	Ralston Water System	6396 Ralston Road	Bainbridge Island	WA	98110			3	3	BI	Ralston Lane, 6396
07520L	Raven Ridge	Po Box 123	Port Orchard	WA	98366	30	0	5	2	BI	Island Center Road, 6977
58097L	Ray, Tim Water System	16341 Olympic View RD	Silverdale	WA	98383			3	2	CK	Olympic View Road, 16333
723754	Reade, Herman, Gordy Water	9745 Echo Valley RD NW	Bremerton	WA	98312			0	3	CK	Echo Valley Road, 9715
129598	Redman,Rova,Anderson,Lock	24487 Johnson Rd. NW	Poulsbo	WA	98370	13		0	4	NK	Johnson Road N.W., 24515
075805	Reese, Roy	Po Box 123	Port Orchard	WA	98366	20	1,150	6	3	BI	Springridge
04033K	Reeves					13	500	3	3	SK	Bethel-Burley Road, 8939
43927L	Reindeer Lane Water System	13440 Reindeer Lane S.W.	Port Orchard	WA	98366	21		4	4	SK	Reindeer Lane S.W., 13440
00294M	Rhododendron Acreage Tract	3278 Seabeck Hwy	Bremerton	WA	98312		500	9	9	CK	Seabeck Highway NW., 3300
128995	Rhododendron Water Assoc.	13567 Olympic View RD NW	Silverdale	WA	98383	25		6	6	CK	Olympic View Road N.W., 13545
363906	Rice Water System	P.O. Box 214	Olalla	WA	98359			6	6	SK	Shady Glen, 13036

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08631K	Rick's Well	P.O. Box 2179	Port Orchard	WA	98366	10		0	2	CK	Seabeck Holly Road N.W., 6610
47251M	Ridge Top Water System	23351 Rhododendron Lane	Poulsbo	WA	98370	27		4	4	NK	Rhododendron Lane, 23379
638559	Rippy Water System	P.O. Box 11183	Winslow	WA	98110	39		4	3	BI	Springridge Road
015207	Rita Water System	P.O. Box 336	Gig Harbor	WA	98335	45		8	6	SK	J.H. Road
08547T	Ritchie Nelson	P.O. Box 336	Gig Harbor	WA	98335	60		9	8	SK	Nelson Road
07382X	Robert Wallace Water	Po Box 1989	Poulsbo	WA	87370	25		4	3	CK	Seabeck Hwy Nw, 10523
036252	Robinhood Terrace	P.O. Box 336	Gig Harbor	WA	98335	28		4	4	SK	NW Lider Road, 218
37364J	Rock Ridge Water System	8555 Anderson Hill Road	Silverdale	WA	98383			9	9	CK	Anderson Hill Road N.W., 8655
03284K	Rolling Ridge Water System	P.O. Box 336	Gig Harbor	WA	98335	25		4	3	SK	Bethel-Burley Rd. S.E., 9266
099142	Rosario Water	4469 Sidney RD SW	Port Orchard	WA	98366			0	2	SK	Sidney Road S.W., 4469
02869B	Rosecross Water System	P.O. Box 1989	Poulsbo	WA	98370	12	2,500	6	4	NK	South Keyport Road
200044	Rosettsky	1821 Rude Road	Poulsbo	WA	98370	27		5	5	NK	Rude Road N.W., 1821
37451V	Rottlers Well	12200 Old Military RD NE	Poulsbo	WA	98370		1,000	8	7	CK	Old Military Road N.E., 12200
07383E	Roundtree	Po Box 123	Port Orchard	WA	98366	32		3	3	SK	State Hwy 3, 11066
020025	Roundtree Water System	P.O. Box 336	Gig Harbor	WA	98335	25		4	4	SK	Burley Road, SE
60666L	Royal Heights Develop. Co.	1161 Liberty Road West	Poulsbo	WA	98370	24	4,000	5	4	NK	Patriot Lane N.W., 19678
74746H	Roza Water System	8913 NE Wardell RD	Bainbridge Island	WA	98110			0	3	BI	Wardwell Road N.E., 8913
01290M	Russell Water	P.O. Box 1989	Poulsbo	WA	98370	25		5	5	SK	Martin Avenue E., 2311
04239X	Ruys Lane Water System	P.O. Box 1989	Poulsbo	WA	98370	25		4	3	BI	Sands Road,
199312	Sanderfur Water System	5985 S.E. Burley Olalla RD	Olalla	WA	98359	20		0	2	SK	Olalla Burley Road S.E., 5985

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07555Y	Satterwhite	Po Box 1989	Poulsbo	WA	98370	30		4	3	BI	Eagle Harbor Dr. NE
017463	Savage, Norm	P.O. Box 1989	Poulsbo	WA	98370	21		4	2	SK	Baby Doll Road S.E., 1825
05092N	Savante	P.O. Box 1989	Poulsbo	WA	98370	27		6	5	NK	Babcock
76456H	Sawdust Hill Water Co	1909 NE Sawdust Hill	Poulsbo	WA	98370	20		0	4	NK	Sawdust Hill Road N.E., 1909
01743J	Scandia Court Water System	P.O. Box 1989	Poulsbo	WA	98370	14	2,500	6	5	NK	Scandia Road, 16974
05383A	Scandia Estates	P.O. Box 123	Port Orchard	WA	98366	33		6	5	NK	Cox RD NW , 15479
76658T	Schmid Water	Po Box 941	Kingston	WA	98346	19	24,000	21	12	NK	Carmody Lane
011995	Schold - Crystal Springs	4076 Crystal Springs Drive	Bainbridge Island	WA	98110	14	1,000	5	5	BI	Crystal Springs Drive, 4076
03563X	Schold-Indianola Water	P.O. Box 178	Indianola	WA	98342	4	1,000	5	5	NK	South Kingston Road, 21977
76731T	Schold-Suquamish Water	P.O. Box 864	Suquamish	WA	98392	30		4	3	NK	Totten N.E., 5787
01017X	Schuster Water	5240 SW Old Clifton RD	Port Orchard	WA	98366	11		0	2	SK	Old Clifton Road S.W., 5240
63951B	Seabeck 7 Waterworks	18531 Stavis Bay Road	Seabeck	WA	98380	36		6	6	CK	Stavis Bay, 18526
056805	Seabeck Vista Water System	P.O. Box 1989	Poulsbo	WA	98379	30		6	4	CK	Alpenglow Drive
00574H	Seabold Acres Water Assoc.	15346 Harvey Road N.E.	Bainbridge Island	WA	98110	21		4	4	BI	Seabold Dr.., 6720, 6740
018950	Seabold Height Lots 10 &11	P.O. Box 2217	Poulsbo	WA	98370	16	1,000	3	4	BI	Agatewood, 15782
769734	Seabold Heights	6599 N.E. Hidden Cove RD	Bainbridge Island	WA	98110	12	11,000	12	12	BI	Manzanita Road, 13871
980334	Seabold Water	Po Box 123	Port Orchard	WA	98366	25		6	6	BI	Harvey Road N.E., 15365
669332	Seaborne	P.O. Box 123	Port Orchard	WA	98366	20	700	6	4	BI	Battle Point Drive, 9670
54601P	Seacliff Water System	12396 NE Marine View Dr.	Kingston	WA	98346			12	8	NK	Marine View Drive N.E., 12388

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37379C	Seal Beach	34734 Pilot PT RD NE	Kingston	WA	98346	30		6	2	NK	Pilot Point Road
275340	Sears Water System	7646 Spurling Lane SE	Port Orchard	WA	98366			4	2	SK	Spurling Lane S.E., 7646
60907Y	Seatter Road/Garrison	P.O. Box 905	Kingston	WA	98346	40		7	5	NK	Seatter Road
05842D	Seattle Yacht Club	8750 Spargur Loop Road	Bainbridge Island	WA	98110	12	4,000	0	4	BI	Spargur Loop Road
775556	Sellers Water	4803 NW Anderson Hill RD	Silverdale	WA	98383			0	2	CK	Anderson Hill N.W., 4803
37481M	Senyohl Water System	P.O. Box 65	Seabeck	WA	98380			3	3	CK	Minning Ln NW ,5981
022115	Settle Water System	P.O. Box 1989	Poulsbo	WA	98370	30		14	14	NK	Beach Drive N.E., 29695
046064	Shadowlands I	P.O. Box 1989	Port Orchard	WA	98366	28		6	6	NK	State Hwy 3 & Scenic Drive
28251M	Shady Hollow Water System	4555 Shady Hollow Lane NW	Bremerton	WA	98312	31		6	5	CK	Shady Hollow Lane N.W., 4690
77770C	Shady Nook Trailer Park	2008 NE 20th ST	Renton	WA	98056			0	13	SK	Bethel Road S.E., 5191
65013A	Shaffer Water	12192 N.E. Klabo Road	Kingston	WA	98346	26		4	4	NK	Klabo Road, 12196
05843X	Shapard	695 Pearl Pl	Bremerton	WA	98310	23		3	3	NK	State Hwy 3, 31259
056256	Sharon Lane	P.O. Box 1989	Pousbo	WA	98370	25		6	6	NK	Hallman Rd, 17638
473843	Shearwater	P.O. Box 336	Gig Harbor	WA	98335	31		8	8	CK	Shearwater Lane N.W.
009849	Sheldon	P.O. Box 1989	Poulsbo	WA	98370	5	1,000	4	4	NK	Falkner Road N.E., 28851
521137	Shellgren-Jeffries	3132 Harold DR SE	Port Orchard	WA	98366	7		0	3	SK	Harold Drive S.E., 3132
038511	Shifrin Water System	P.O. Box 1989	Poulsbo	WA	98370	12	1,150	3	3	NK	Tytler Road N.E., 26079
082122	Shobert/Berry	P.O. Box 123	Port Orchard	WA	98366	12		6	4	SK	Bay Ridge Drive NW
00905Q	Shotwell	Po Box 333	Suquamish	WA	98397	26		3	3	NK	Stenbom Lane, 16887
17716Q	Show-Me Water System	8000 N.E. Bayberry Lane	Kingston	WA	98346	14	1,600	8	5	NK	Bayberry NE, 800

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78928J	Sicks, David	8523 NW Anderson Hill Road	Silverdale	WA	98383	15		0	2	CK	Wade Rd. NW, 8523
639012	Sid Price Water System	P.O. Box 2468	Poulsbo	WA	98370	12	1,100	3	3	NK	Sid Price Road, 6737
17721D	Silent Sky	P.O. Box 2985	Silverdale	WA	98383	12	1,200	6	7	CK	Miami Beach Road, 9494
79100X	Silver Beach Comm Water System	P.O. Box 81	Tracyton	WA	98383	40	4,500	0	12	CK	Tracyton Blvd., 8161
79388C	Simonson Water	18355 Widme Road NE	Keyport	WA	98345			0	2	NK	Widme Road N.E., 18355
79386B	Simonson, Marjorie Water	306 Hostmark ST	Poulsbo	WA	98370			0	2	NK	Hostmark Road N.E., 2285
79755K	Skinner Water	P.O. Box 53	Gorst	WA	98337	16		0	4	SK	Anderson Hill Rd. SW, 3807
05380R	Sloman	P.O. Box 1989	Poulsbo	WA	98370	31		5	3	NK	Virginia Point Rd., 15519
177115	Smc Water System	8000 NE Rocky Lane	Kingston	WA	98346			0	3	NK	Big Valley Road N.E., 24100
00396T	Smith Gulch Estates	P.O. Box 1994	Poulsbo	WA	98370	21		4	2	NK	Noll Road N.E., 16845
01973K	Smith-Wales Water System	25861 West Canyon Road NW	Poulsbo	WA	98370	12		2	2	NK	Clear Creek Road N.W., 18589
04075M	Sol Bakken Water Assoc	4761 NE Sylte RD	Poulsbo	WA	98370	40		9	8	NK	Sylte Road, 4460 NE
81321Q	Sonnabend Water	3722 NW Halfmile RD	Silverdale	WA	98383			0	2	CK	Half Mile Road N.W., 3722
129767	Sooner Or Later Acres	20605 Pugh RD NE	Poulsbo	WA	98370	43		7	7	NK	Pugh Road, 20495
82180K	South Olalla Water Assn	Po Box 615	Olalla	WA	98359			9	9	SK	Roy Road S.E., 14898
05236E	South Springridge Water	7800 Springridge Road NE	Bainbridge Island	WA	98110	7	1,150	7	6	BI	Spring Ridge Road, 7820
03687M	Southworth	P.O. Box 336	Gig Harbor	WA	98335	12	1,200	6	6	SK	Wilson Creek Road
60229L	Spellman Water System	8509 Ferncliff Ave	Bainbridge Island	WA	98110	10	1,100	4	4	BI	Ferncliff, 8517
17986T	Springwood Lane	10010 NE Springwood Lane	Bainbridge Island	WA	98110			4	4	BI	Springwood NE, 9012

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60924X	Springwood No. 1 Water	9012 Springwood Ave NE	Bainbridge Island	WA	98110	11	1,100	4	4	BI	Springwood Road, 9022
01198M	Springwood No. 2	Po Box 1989	Poulsbo	WA	98370	32		7	7	BI	Springwood Lane, 8993
04238D	Stallion Trace					27		6	5	NK	Hwy 3
83555Y	Stanek Water	1383 Finn Hill Road	Poulsbo	WA	98370			0	3	NK	Finn Hill Road N.W., 1375
454273	Stanton Water System	9520 Ramiller Lane SE	Port Orchard	WA	98366	12		0	2	SK	Ramiller Lane S.E.
00837D	Stavis View Estates Water	6996 Cadmar Lane NW	Seabeck	WA	98380	62	2,000	14	10	CK	Cadmar Lane NW, 6916
83891A	Stead Water	2856 Woods RD SE	Port Orchard	WA	98366	24		0	3	SK	Woods Road E., 2856
399314	Steedman/Jankord Water Sys	4117 26th SW	Seattle	WA	98106			5	4	SK	View Park S.E., 9436
18051B	Stenbom Water System	16940 Noll Road NE	Poulsbo	WA	98370			0	2	NK	Noll Road N.E., 16940
00883M	Stenman Lane					34		4	4	NK	Stenman Lane
37376U	Stetson Acres	6569 Fletcher Bay RD	Bainbridge Island	WA	98110	20	1,100	6	6	BI	Fletcher Bay Road, 6565
84453V	Stockwell Water	5672 SE Bulman Ave	Port Orchard	WA	98366			6	6	SK	Bulman Ave S.E., 5672
845340	Stone-Erickson Water	4573 Pt. White Dr.	Bainbridge Island	WA	98110			0	2	BI	New Sweden, 5479
012514	Stottlemeyer Water System	23265 Stottlemeyer RD	Poulsbo	WA	98370	43		9	9	NK	Stottlemeyer Road N.E., 23255
01037E	Strandskov Acres	P.O. Box 1314	Poulsbo	WA	98370	29		4	3	NK	Kippola Road N.W.,
663484	Strauss Water System	13180 Phelps RD NE	Bainbridge Island	WA	98110	10		0	2	BI	Phelps Road N.E., 13180
06341A	Strawberry Water System	Po Box 78	Gig Harbor	WA	98335	13	2,500	6	6	BI	Morgan RD NE 9069
06999H	Strumland	23299 Aldo RD NW	Poulsbo	WA	98370	31	2,000	9	8	NK	Aido Road N.W., 23299
84683W	Stuhler Water	P.O. Box 336	Gig Harbor	WA	98335	30		6	6	CK	Lakeview Ave N.W., 4100
07188R	Suldans Boat Works	P.O. Box 123	Port Orchard	WA	98366	24		4	4	SK	1343 SW Bay Street

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454400	Sulu Water System	15479 Harvey Road NE	Bainbridge Island	WA	98110	5	1,000	4	2	BI	Harvey Road N.E., 15479
374445	Sunny Woods Water System	7919 NE Sunny Woods Ln.	Kingston	WA	98346	31		9	7	NK	Sunny Woods Lane
861185	Sunset Heights Water	8236 Hansen RD NE	Bainbridge Island	WA	98110			6	6	BI	Hansen Road, 8240
47299T	Sunset Ridge Water System	P.O. Box 147	Seabeck	WA	98380	31		8	7	CK	Hite Center Road, 16131
008486	Sunset Water District No. 1	1051 Sunset Way NE	Poulsbo	WA	98370	13	500	5	4	NK	Sunset Way, 1051
07001Y	Sunshine Well					8	160	0	2	CK	Gross Road N.W., 6305,6299
IH458M	Suquamish Tribal Center	P.O. Box 498	Suquamish	WA	98397			0	2	NK	Port Madison Indian Reservaton
86610N	Swanson, L Water System	21992 Clear Creek RD NW	Poulsbo	WA	98370	25		6	4	NK	Clear Creek Road N.W., 21992
00132X	Sww Water System	1335 SE Swofford Lane	Port Orchard	WA	98366	18	1,000	4	2	SK	Bethel-Burley Road S.E., 10736
86767P	Szymanski Spring Creek Water	7985 Vandecar RD SE	Port Orchard	WA	98367	22	0	4	4	SK	Spring Creek Road S.E., 2500
86765N	Szymanski-Vandercar Water	8075 Vandecar Road SE	Port Orchard	WA	98366			9	7	SK	Vandecar Road, 8075
190837	T. C. Water	380 Kitsap Lake Road	Bremerton	WA	98312	10		2	2	CK	Kitsap Lake Road N.W., 380
06177X	Taka Lane Water Assoc	24731 Taka LN NE	Kingston	WA	98346	25	1,200	9	7	NK	Taka Lane N.E., 24650
47449R	Tall Firs	1138-C Walnut	Bremerton	WA	98310			6	6	CK	Sesame Street, 8744
06082F	Tanglewood Water System	P.O. Box 1989	Poulsbo	WA	98370	25	0	5	5	CK	Seabeck Hwy N.W., 5373
47464P	Tasia Lane	2870 Wild Rhody LN NW	Poulsbo	WA	98370			8	8	NK	Tasia Lane
009216	Taylor, Tom Water	2012 Paulson Road	Poulsbo	WA	98370	33		4	2	NK	Paulson Road, 2012
876664	Thalberg Water System	10595 Battle Point Dr. NE	Bainbridge Island	WA	98110	35		8	8	BI	Battle Point Drive, 10621

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00701D	Thetford Water	17139 Scandia Ct NW	Poulsbo	WA	98370	18	1,000	4	2	NK	Scandia Court, 17139
00730N	Thompson	10632 S.E. Cisco Road	Port Orchard	WA	98367	9	1,400	5	5	SK	Cisco Road S.E.
08389L	Thon Well	6835 SW Old Clifton RD	Port Orchard	WA	98366			5	5	SK	Old Clifton Road, 6813
60894L	Three Berry Lane	Po Box 533	Kingston	WA	98346	23		6	6	NK	Hansville Road N.E., 27865
08644C	Three Brothers Water System	P.O. Box 393	Olalla	WA	98359		1,200	4	4	SK	Nelson Road S.E., 7681
074294	Tib-Fig	P.O. Box 123	Port Orchard	WA	98366	30		6	4	NK	NE ST Hwy 104, 2999
02776X	Toto Water					20		2	2	SK	Ferate Avenue
40329N	Towne-Pratt-Towne	1978 Ptarmigan Lane NW	Poulsbo	WA	98370	15	1,500	3	3	NK	Ptarmigan Lane N.W., 1986
003492	Traceyton Road Water	P.O. Box 240	Tracyton	WA	98393	34		3	2	CK	Tracyton Blvd., 6382
03927F	Treese, Frank Water	7382 SE King RD	Port Orchard	WA	98367	15		4	4	SK	King Road S.E., 7370
02634Q	Trillium Lane Water System					6	1,000	6	4	NK	Marble Lane
65053B	Trostad-Lane-Putman Water	19502 Noll RD	Poulsbo	WA	98370		1,150	0	4	NK	Noll Road N.E., 19502
015521	Trout Pond Water System	15588 Glenwood Road SW	Port Orchard	WA	98366		1,200	0	2	SK	Glenwood Road S.W., 15588
05136A	Ttj	5300 NW Newberry Hill Rd, Suite 100	Silverdale	WA	98383	34		6	6	CK	Lois Drive
43656F	Turnstone Lane	15206 NW Turnstone Lane	Seabeck	WA	98380	44		6	6	SK	Turnstone Lane
650011	Twin Brooks	12200 Old Military Road	Poulsbo	WA	98370			5	3	CK	Twin Brooks Ln NE, 10380
580752	Twitch Water System	1863 NW Sherman Hill RD	Poulsbo	WA	98370	28		6	6	NK	NW Sherman Hill Rd. 1863
63803Y	Tytler Road	P.O. Box 1266	Poulsbo	WA	98370	32		4	4	NK	Tytler Road, 26081
47351R	Union River Acres	P.O. Box 1989	Poulsbo	WA	98370	29		9	8	SK	W. Belfair Valley Road, 9775

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02114K	Upton Water	625 Winslow Way East	Bainbridge Island	WA	98110	25		1	1	BI	Skogan Lane, 15168
00499F	Uts Water System	4427 Trillium Lane	Bremerton	WA	98312	3	1,150	4	4	CK	Calamity Lane Nw, 4611
58119P	Uzzell Road Water	P.O. Box 134	Olalla	WA	98359			9	8	SK	Uzzell Road, 15028
02638T	Vaa Water System	P.O. Box 1989	Poulsbo	WA	98370	25		6	2	NK	Canyon Creek Road, 25383
03737F	Vanderstaay	P.O. Box 98	Manchester	WA	98353	28		6	4	SK	Sedgwick, 7452 SE
45466L	Vanderstaay, Scott Water	7135 Sidney Rd.	Port Orchard	WA	98366	22		5	3	SK	Sidney Road, 7135
00105P	Venice Water System	11906 Venice Loop	Bainbridge Island	WA	98110	27		6	6	BI	Venice Loop, 11905
005793	Verissimo Lane	P.O. Box 123	Port Orchard	WA	98366	25		4	4	CK	Verrismo, 10733
33773J	View Point Water Assoc	P.O. Box 4848	Bremerton	WA	98312	7	3,000	6	6	CK	Stavis Bay Road, 19722
053732	Viking Cove	P.O. Box 1989	Poulsbo	WA	98370	21		4	4	NK	Viking Way, 17098
63409J	Viking Water System	2512 Lincoln Rd.	Poulsbo	WA	98370	33		4	4	NK	Lincoln Hill Road
004095	Vincent Road Water	Po Box709	Keyport	WA	98345	25		9	9	BI	Vincent Road N.E., 7245
17914Y	Vincent, Jay Water	15870 Peacock Hill RD SE	Olalla	WA	98359	5		0	2	SK	Peacock Hill Road S.E., 15870
01223C	Vinland Water	P.O. Box 1989	Poulsbo	WA	98370	10	1,000	4	4	NK	Finn Hill
919243	Vinland Wood Water Assn	P.O. Box 531	Poulsbo	WA	98370	15	1,300	9	9	NK	Tall Fir Ln, 3096
39792X	Virginia Cove	15315 Virginia Pt. RD NE	Poulsbo	WA	98370	26		5	4	NK	Virginia Point Road
90885Y	Vyb Water Co	6967 SE 160th	Olalla	WA	98359	16		0	3	SK	160th S.E., 6967
920282	Waddell Water	15576 Virginia PT RD NE	Poulsbo	WA	98370	16		0	2	NK	Virginia Point RD N.E., 15576
049240	Wagener	Po Box 1989	Poulsbo	WA	98370	2	1,000	3	3	BI	Agatewood, 16011
438871	Walden Water System	7973 NE Walden Lane	Bainbridge Island	WA	98110	50	10,000	14	11	BI	Walden Lane
92395P	Walker Beach Water Assn	P.O.Box 37	Port Gamble	WA	98364	60		0	9	NK	Wheeler N.E., 3270
92400X	Walker Beach Water System	Po Box 123	Port Orchard	WA	98366	15		6	6	NK	Wheeler Street N.E., 3060

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06340T	Walker Mountain No. 1	P.O. Box 1989	Poulsbo	WA	98370	30		6	5	NK	Viking Way
05376L	Wallace					5	1,000	3	3	BI	Old Mill Rd.
26746F	Wandling Water System	1444 NE Paulson Road	Poulsbo	WA	98370	20		5	1	NK	Paulson Road N.E., 1390
61081U	Ward Water	1182 Suzanne Ct.	Poulsbo	WA	98370	24		3	3	NK	Bond Road, 21530
09777W	Washtex Water Supply No. 2	1893 NW Rude Road	Poulsbo	WA	98370	30		4	4	NK	Rude Road N.W., 1893
935951	Waters, Owen Water System	P.O. Box 11692	Bainbridge Island	WA	98110	15	1,150	4	4	BI	Paulanna LN Ne, 8417
314963	Waterview Acres Water System	13657 Olympic View Rd.	Silverdale	WA	98383			3	3	CK	Olympic View Road, 13657
03716E	Watters, Ken Water	12907 Holly RD	Bremerton	WA	98312	20		4	4	CK	Holly Road N.W., 12907
03028U	Weed Lane Water	3256 Weed LN	Poulsbo	WA	98370	25		4	4	NK	Weed Lane, 3272, 3264, 3256 & 3242
039536	Weese Water System	2530 Woods RD E	Port Orchard	WA	98366			0	4	SK	Conwhite Lane, 8845
04703P	Welch	P.O. Box 1989	Poulsbo	WA	98370	47		6	3	NK	Heron Pond Lane
94180Q	Well Pines Water System	14779 Glenwood Road SW	Port Orchard	WA	98367			7	6	SK	Glenwood Road S.W., 14981
14779M	Well Spring Water Assoc	170 Rainier Lane	Port Ludlow	WA	98365			4	4	NK	Sesame Street, 8323
17127Q	Well's Water	P.O. Box 335	Gig Harbor	WA	98335	31		7	7	SK	Wildwood Road S.W., 2061
369817	Wendt Water System	10971 Manitou Beach DR NW	Bainbridge Island	WA	98110	30		6	5	BI	Falk Road, 11000
018847	West Canyon	25419 Canyon Rd. N.W.	Poulsbo	WA	98370	34		6	4	NK	West Canyon Road
17579K	West Firs	P.O. Box 590	Seabeck	WA	98380			0	4	SK	Glenn Firs Lane N.W., 5457
05986M	West Parcells					13	1,125	6	4	NK	Parcells Road
35842H	West Port Madison	15425 Smoland Lane NE	Bainbridge Island	WA	98110	35		6	6	BI	Smoland Lane 15425
01641C	West Water System	14987 Levin Road NW	Poulsbo	WA	98370			0	2	NK	Levin Road N.W., 14987

PWS ID	System Name	Mail Address	Mail City	Mail State	Mail Zip	Well Pump	Stor	Conn App	Conn Curr	Loc	Road Address
632160	Western Stavis Div. 1	P.O. Box 20098	Seattle	WA	98102	25	17,500	17	11	CK	Stavis Bay Road NW
040343	Westgate Road Water System	5300 NW Newberry Hill Rd, Suite 100	Silverdale	WA	98383	25		4		CK	Westgate
05519V	Westlake Water System	P.O. Box 1989	Poulsbo	WA	98370	14	1,000	4	4	CK	Lawstad Place, 8176
63764W	Weston Water System	P.O. Box 348	Wauna	WA	98395	13		3	3	SK	Sidney Road S.W., 15195
59991Q	Weyer Lane Water System	P.O. Box 336	Gig Harbor	WA	98335	31		10	6	SK	Weyer Lane
070539	Wheeler West	5200 Forest Glen Ln.	Bainbridge Island	WA	98110	32		5	4	BI	Forest Glade Lane N.E., 5209
29695A	Wildcat Lake Tracts	7420 Nikomis Lane N.W.	Bremerton	WA	98312			0	8	CK	Wildcat Lake Road N.W.
281249	Wildcat Lake Water	P.O. Box 1989	Poulsbo	WA	98370			6	6	CK	Lakeview Avenue N.W., 4240
03482T	Wildcat Ridge	P.O. Box 1989	Poulsbo	WA	98370	32		6	6	CK	Wildcat Lake Road
36666W	Willamette Water Assn	9789 Willamette Meridian	Silverdale	WA	98383	33		6	2	CK	Willamette Meridian, 9667
14551Q	Willamette Water System	9587 Willamette-Meridian	Silverdale	WA	98383	12		0	2	CK	Williamette Merdian, 9587
97105E	Willard Water Supply	1821 NW 195th St, Apt 8	Shoreline	WA	98177			0	5	NK	Bodine Road, 35144
01597M	William Heights					25		5	5	SK	Glenwood, 10696
010804	Wimbley Water	P.O. Box 1989	Poulsbo	WA	98370	31		3	1	NK	Virginia Loop Road N.E.
023011	Windmill Heights Water	4450 NE Lincoln RD	Poulsbo	WA	98370			0	2	NK	Lincoln Road N.E., 4450
009237	Wise Acre	P.O. Box 387	Indianola	WA	98342	19	1,000	9	9	NK	Midway Avenue N.E.
304014	Wolf Water System	P.O. Box 2985	Silverdale	WA	98383	24		4	4	SK	Phillips Road, 7071
01691N	Wolley Water	13043 Madrona Road SW	Port Orchard	WA	98366	20		0	3	SK	Madrona Rd, 12898
00702X	Woodhaven Farm Water	6590 Fletcher Bay Road NE	Bainbridge Island	WA	98110	15		3	3	BI	Fletcher Bay Road N.E., 6590

PWS ID	System Name	Mail Address	Mail City	Mail State	Mail Zip	Well Pump	Stor	Conn App	Conn Curr	Loc	Road Address
981673	Woodland Acres No. 1	9395 Orchard Ave. S.E.	Port Orchard	WA	98366			8	8	SK	Orchard Ave S.E., 9375
98168L	Woodland Acres No. 2	7323 SE Fragaria RD	Olalla	WA	98359	37		8	9	SK	Brandywine Lane, 9540
01486Q	Woodland Heights	P.O. Box 1989	Poulsbo	WA	98370	10	1,000	6	5	CK	Seabeck Hwy
11294Q	Woodpecker Waters	P.O. Box 1888	Poulsbo	WA	98370	4	1,100	5	5	NK	Hwy 3 N.E., 28202
98490M	Woody's Park	1247 S.E. Cedar Rd.	Port Orchard	WA	98366			5	5	SK	Cedar Road S.E., 1251
66715A	Wyrich Water System	15720 Viking Way NW	Poulsbo	WA	98370			0	3	NK	Viking Way, 15720
013262	Yakima Water	P.O. Box 336	Gig Harbor	WA	98335	27		5	3	SK	Yakima Street, 2326
032473	Yates Water System	P.O. Box 1989	Poulsbo	WA	98370	26		6	6	CK	Yates Lane, 10298
00559K	Yates-Little Well Association	10236 Yates LN NW	Bremerton	WA	98312	28		5	5	CK	Yates Lane
03854K	Young Water System, Brad	P.O. Box 1989	Poulsbo	WA	98370	10	1,000	6	4	NK	Hansville Road
22597R	Young, Margaret A.	P.O. Box 176	Port Gamble	WA	98364			0	2	NK	State Hwy. 104
33367U	Zerbal Water System	1138c Walnut	Bremerton	WA	98310	8		4	4	CK	Sesame Street, 8660
164148	Zimmerman	P.O. Box 336	Gig Harbor	WA	98335	33		6	6	SK	Nelson Road S.E., 3900

Footnote:
(1) Data Obtained from the Kitsap County Health District (KCHD) water system database May 2004

Appendix I

Kitsap County Water System Survey Data

Survey Data - Water Production

	Own Source (MG)										
System Name	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	Average
ALPINEWOOD											
ANNAPOLIS WATER DISTRICT	566.98	584.37	557.98	638.47	645.53	621.70	606.77	691.05	654.59	636.01	620.34
APEX WATER SUPPLY INC											
B K S											
BAINBRIDGE ISLAND, CITY OF	1.90	2.13	1.90	2.03	2.14	2.31	2.05	2.37	2.42	2.64	2.19
BEAR CUB WATER ASSOC											
BETHEL EAST											
BILL POINT WATER											
BREMERTON WEST 517 ZONE, CITY OF											
BREMERTON, CITY OF	3,118.00	3,095.00	2,821.00	3,026.00	2,878.00	2,986.00	2,709.00	2,894.00	2,982.00	2,964.00	2,947.30
BRIDLETREE WATER CO INC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.73	13.73
CEDAR GLEN MOBILE HOME PARK	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.94	7.94
DRIFTWOOD COVE	0.00	0.00	0.00	0.00	2.56	2.79	2.20	3.64	3.41	0.00	2.92
ELDORADO HILLS	0.00	0.00	16.25	19.50	19.41	198.00	14.72	16.22	15.59	0.00	42.81
EMERALD HEIGHTS	0.00	0.00	0.00	0.00	0.00	0.72	0.65	0.70	0.68	0.71	0.69
ERLAND POINT WATER CO											
FROG POND WATERS INC											
GALA PINES WATER	0.00	0.00	0.00	0.00	0.00	4.75	4.17	4.28	4.19	4.52	4.38
GLENWOOD STATION											
HARBOR HEIGHTS											
HINTZVILLE ACRES											
HOLLY											
HORIZONS WEST											
INDIANOLA WATER	0.00	0.00	33.43	39.77	40.10	38.42	41.08	41.57	40.61	44.84	39.98
ISLAND LAKE											
ISLAND UTILITY											

	Own Source (MG)										
System Name	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	Average
KEYPORT WATER	0.00	0.00	42.88	66.13	78.05	38.17	27.62	32.27	27.16	28.49	42.60
KITSAP WEST MOBILE HOME PARK	0.00	0.00	0.00	0.00	0.00	0.00	4.50	4.50	4.50	4.50	4.50
KRISTA FIRS	0.00	5.02	5.08	5.79	6.12	4.51	0.00	2.26	4.66	3.75	4.65
LITTLE TREE											
LONG LAKE VIEW EST 2 5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	29.04	30.17	0.00	29.61
MAINLAND VIEW MANOR											
MANCHESTER STATE PARK											
MANCHESTER WATER DISTRICT											
MARTELL MOBILE MANOR											
MCCORMICK WOODS											
MEADOWMEER WATER SERVICE ASSN											
MILLER BAY	0.00	0.00	32.13	26.66	26.40	26.04	25.35	26.30	25.46	0.00	26.90
NAVAL UNDERSEA WARFARE CTR DIV KEYP											
NAVY YARD PARK	0.00	0.00	0.00	0.00	0.00	0.00	9.01	9.40	9.83	12.58	10.20
NORTH BAINBRIDGE WATER CO INC											
NORTH PENINSULA	0.00	0.00	0.00	0.00	0.00	177.65	208.04	218.19	229.21	232.26	213.07
NORTH PERRY AVENUE WATER DISTRICT	0.00	0.00	0.00	559.74	597.70	570.43	458.72	556.39	556.38	516.75	545.16
OLYMPIC VIEW MOBILE MANOR											
PARKVIEW TERRACE											
PINE LAKE MOBILE HOME EST 1 3											
PORT GAMBLE - LOWER - CWS											
PORT GAMBLE - UPPER- CWS											
PORT MADISON WATER COMPANY											
PORT ORCHARD WATER DEPT											
POULSBO, CITY OF	378.73	280.96	274.05	284.81	359.55	348.97	353.51	325.30	308.57	326.71	324.12
PRIDDY VISTA											
PUGET SOUND NAVAL SHIPYARD											
ROCKAWAY BEACH WATER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.07	0.07

System Name	Own Source (MG) 1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	Average
ROCKY POINT WATER DISTRICT 12											
SANDY HOOK PARK COMMUNITY CLUB											
SCENIC BEACH STATE PARK											
SEABECK	0.00	0.00	0.00	0.00	0.00	5.35	4.76	6.65	5.85	0.00	5.65
SILVERDALE WATER DIST 16	5.88	6.68	6.31	7.12	7.91	7.89	7.65	8.47	8.02	8.51	7.44
SOUTH BAINBRIDGE WATER SYSTEM INC											
STRATTONWOOD											
STRAWBERRY HILL	0.00	0.00	0.00	0.00	0.00	3.93	10.46	12.63	11.70	0.00	9.68
SUBASE BANGOR											
SUNNYSLOPE WATER DISTRICT	3.01	3.41	3.16	3.81	3.88	3.49	3.97	3.87	3.87	0.00	3.61
SUQUAMISH	0.00	0.00	78.65	88.32	87.33	83.35	86.26	96.00	95.16	100.17	89.41
TAHUYEH LAKE COMMUNITY CLUB											
TRACYTON WATER DISTRICT											
VIEWSIDE COMMUNITY WATER	0.00	0.00	0.00	0.00	0.00	0.00	4.86	4.86	4.86	4.86	4.86
VINLAND	0.00	0.00	0.00	0.00	64.76	68.10	73.72	76.05	78.30	86.33	74.54
WATAUGA BEACH	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.60	7.87	9.56	8.68

Survey Data - Water Sales

System Name		Annual Water Sold (MG) 1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
ALPINEWOOD											
ANNAPOLIS WATER DISTRICT	SF Residential	0.00	401.35	357.74	430.44	437.81	401.48	381.30	394.95	396.93	380.81
	MF Residential	0.00	0.00	0.00	0.00	0.00	80.96	74.49	77.78	82.12	80.95
	Comm/Indust.	0.00	0.00	0.00	0.00	0.00	44.13	48.31	448.29	47.62	57.31
	Irrigation	0.00	0.00	0.00	0.00	0.00	12.21	10.43	11.01	14.73	19.70
	institutional	0.00	0.00	0.00	0.00	0.00	13.64	11.91	12.06	18.41	3.48
	TOTAL SOLD	0.00	401.35	357.74	430.44	437.81	552.42	526.45	944.08	559.81	542.26
	Wholesale	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Non-revenue	0.00	0.00	0.00	0.00	0.00	29.83	26.96	29.41	32.76	30.78
	Total	0.00	555.20	545.52	608.54	614.20	582.25	553.40	573.57	592.58	573.05
APEX WATER SUPPLY INC		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B K S		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BAINBRIDGE ISLAND, CITY OF	SF Residential	70.22	77.13	74.73	102.73	91.79	92.82	86.58	97.53	98.28	107.28
	MF Residential	22.47	21.53	23.32	25.85	25.93	38.84	37.30	36.13	35.78	36.61
	Comm/Indust.	45.09	40.60	43.43	47.43	46.43	49.45	49.05	47.36	48.61	53.59
	Irrigation	0.00	0.00	0.00	0.00	0.00	5.69	4.84	5.60	8.04	8.02
	TOTAL SOLD	137.78	139.26	141.49	176.01	164.15	186.81	177.77	186.62	190.71	205.49
	Wholesale	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Non-revenue	52.13	73.33	48.43	13.25	49.70	43.98	26.73	50.40	51.45	58.15
	Total	189.91	220.07	190.34	202.73	213.86	230.79	204.50	237.02	242.17	263.63
BEAR CUB WATER ASSOC		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BETHEL EAST		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BILL POINT WATER		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BREMERTON WEST 517 ZONE, CITY OF		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

System Name		Annual Water Sold (MG)									
		1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
BREMERTON, CITY OF	SF Residential	1,054.00	902.00	854.00	929.00	891.00	878.00	853.00	906.00	879.00	867.00
	MF Residential	356.00	358.00	311.00	329.00	307.00	312.00	299.00	294.00	305.00	249.00
	Comm/Indust.	458.00	414.00	352.00	369.00	360.00	355.00	332.00	288.00	351.00	321.00
	Irrigation	82.00	102.00	75.00	110.00	117.00	148.00	120.00	163.00	149.00	154.00
	TOTAL SOLD	1,950.00	1,776.00	1,592.00	1,737.00	1,675.00	1,693.00	1,604.00	1,651.00	1,684.00	1,591.00
	Wholesale	1,336.00	1,106.00	1,052.00	1,150.00	1,050.00	1,162.00	1,180.00	1,317.00	1,011.00	1,050.00
	Non-revenue	0.00	211.00	177.00	137.00	155.00	129.00	0.00	0.00	197.00	261.00
	Total	3,286.00	3,093.00	2,821.00	3,024.00	2,880.00	2,984.00	2,784.00	2,968.00	2,892.00	2,947.00
BRIDLETREE WATER CO INC	SF Residential	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	MF Residential	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Comm/Indust.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Irrigation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL SOLD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.33
	Wholesale	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Non-revenue	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.81
	Total Production	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.14
CEDAR GLEN MOBILE HOME PARK	SF Residential	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	MF Residential	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Comm/Indust.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Irrigation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL SOLD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Wholesale	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Non-revenue	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total Production	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DRIFTWOOD COVE	SF Residential	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	MF Residential	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Comm/Indust.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Irrigation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL SOLD	0.00	0.00	0.00	0.00	2.40	2.54	2.95	3.53	3.23	3.42
	Wholesale	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Non-revenue	0.00	0.00	0.00	0.00	0.17	0.25	0.26	0.11	0.18	0.18
	Total Production	0.00	0.00	0.00	0.00	2.56	2.79	3.20	3.64	3.41	3.60
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

System Name		Annual Water Sold (MG)									
		1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
ELDORADO HILLS	SF Residential	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	MF Residential	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Comm/Indust.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Irrigation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL SOLD	0.00	0.00	0.00	0.00	16.16	15.31	13.50	15.43	14.03	12.81
	Wholesale	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Non-revenue	0.00	0.00	0.00	0.00	3.24	1.13	1.23	0.78	1.55	2.57
	Total Production	0.00	0.00	0.00	0.00	19.41	16.44	14.72	16.22	15.59	15.38
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EMERALD HEIGHTS	SF Residential	0.00	0.00	0.00	0.00	0.00	6.38	6.50	6.35	5.45	6.73
	MF Residential	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Comm/Indust.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Irrigation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL SOLD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Wholesale	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Non-revenue	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total Production	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ERLAND POINT WATER CO		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FROG POND WATERS INC		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GALA PINES WATER	SF Residential	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	MF Residential	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Comm/Indust.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Irrigation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL SOLD	0.00	0.00	0.00	0.00	0.00	4.44	3.88	4.10	3.93	4.17
	Wholesale	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Non-revenue	0.00	0.00	0.00	0.00	0.00	0.30	0.29	0.19	0.26	0.34
	Total Production	0.00	0.00	0.00	0.00	0.00	4.75	4.17	4.28	4.19	4.52

System Name		Annual Water Sold (MG) 1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
GLENWOOD STATION		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HARBOR HEIGHTS		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HINTZVILLE ACRES		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HOLLY		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HORIZONS WEST		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
INDIANOLA WATER	SF Residential	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	MF Residential	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Comm/Indust.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Irrigation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL SOLD	0.00	0.00	29.18	36.35	36.31	36.13	37.08	38.59	37.42	41.51
	Wholesale	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Non-revenue	0.00	0.00	4.25	3.40	3.79	2.29	4.01	2.99	3.19	3.33
	Total Production	0.00	0.00	33.43	39.77	40.10	38.42	41.08	41.57	40.61	44.84
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ISLAND LAKE		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ISLAND UTILITY		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
KEYPORT WATER	SF Residential	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	MF Residential	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Comm/Indust.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Irrigation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL SOLD	0.00	0.00	27.49	26.70	25.98	27.67	25.53	31.31	26.07	25.50
	Wholesale	0.00	0.00	14.43	37.30	44.29	9.93	0.00	0.00	0.00	0.00
	Non-revenue	0.00	0.00	0.96	2.12	7.78	0.56	2.09	0.96	1.09	2.99
	Total Production	0.00	0.00	42.88	66.13	78.05	38.17	27.62	32.27	27.16	28.49
KITSAP WEST	SF Residential	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MOBILE HOME PARK	MF Residential	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Comm/Indust.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Irrigation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL SOLD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Wholesale	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Non-revenue	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total Production	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

System Name		Annual Water Sold (MG) 1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
KRISTA FIRS	SF Residential	0.00	4.87	4.85	5.29	5.79	4.34	0.00	2.26	4.66	3.75
	MF Residential	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Comm/Indust.	0.00	0.15	0.23	0.50	0.33	0.18	0.00	0.00	0.00	0.00
	Irrigation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL SOLD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Wholesale	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Non-revenue	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total Production	0.00	5.02	5.08	5.79	6.12	4.51	0.00	2.26	4.66	3.75
LITTLE TREE		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LONG LAKE VIEW EST 2 5	SF Residential	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	MF Residential	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Comm/Indust.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Irrigation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL SOLD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	30.18	28.21	29.37
	Wholesale	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Non-revenue	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.80	1.96	2.27
	Total Production	0.00	0.00	0.00	0.00	0.00	0.00	0.00	31.99	30.17	31.64
MAINLAND VIEW MANOR		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MANCHESTER STATE PARK		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MANCHESTER WATER DISTRICT		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MARTELL MOBILE MANOR		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MCCORMICK WOODS		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MEADOWMEER WATER SERVICE ASSN		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MILLER BAY	SF Residential	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	MF Residential	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Comm/Indust.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Irrigation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL SOLD	0.00	0.00	0.00	0.00	25.40	24.42	24.38	25.26	24.55	25.58
	Wholesale	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Non-revenue	0.00	0.00	0.00	0.00	1.09	1.62	1.61	1.03	0.86	0.50
	Total Production	0.00	0.00	0.00	0.00	26.49	26.04	25.99	26.29	25.46	26.68

System Name		Annual Water Sold (MG) 1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
NAVAL UNDERSEA WARFARE CTR DIV KEYP		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NAVY YARD PARK	SF Residential	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	MF Residential	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Comm/Indust.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Irrigation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL SOLD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.06	8.07
	Wholesale	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Non-revenue	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.77	4.51
	Total Production	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.83	12.58
NORTH BAINBRIDGE WATER CO INC		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NORTH PENINSULA	SF Residential	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	MF Residential	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Comm/Indust.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Irrigation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL SOLD	0.00	0.00	0.00	0.00	0.00	160.16	193.68	202.95	211.74	213.70
	Wholesale	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Non-revenue	0.00	0.00	0.00	0.00	0.00	17.49	14.36	15.24	17.47	18.56
	Total Production	0.00	0.00	0.00	0.00	0.00	177.65	208.04	218.19	299.21	232.26
NORTH PERRY AVENUE WATER DISTRICT	SF Residential	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	MF Residential	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Comm/Indust.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Irrigation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL SOLD	0.00	0.00	0.00	0.00	574.21	592.02	531.38	559.10	596.08	583.00
	Wholesale	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Non-revenue	0.00	0.00	0.00	0.00	23.50	-21.59	17.34	-2.71	-39.70	-21.26
	Total Production	0.00	0.00	0.00	0.00	597.71	570.43	548.72	556.39	556.38	561.75
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OLYMPIC VIEW MOBILE MANOR		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PARKVIEW TERRACE		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

System Name		Annual Water Sold (MG) 1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
PINE LAKE MOBILE HOME EST 1 3		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PORT GAMBLE - LOWER - CWS		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PORT GAMBLE - UPPER- CWS		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PORT MADISON WATER COMPANY		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PORT ORCHARD WATER DEPT		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
POULSBO, CITY OF	SF Residential	0.00	0.00	86.03	111.09	114.64	129.53	113.20	113.91	0.00	121.94
	MF Residential	0.00	0.00	45.38	57.98	62.36	73.84	64.51	65.67	0.00	47.81
	Comm/Indust.	0.00	0.00	73.34	91.71	102.00	92.57	88.02	58.59	0.00	72.45
	Irrigation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14.94	0.00	21.18
	TOTAL SOLD	0.00	0.00	204.74	260.77	279.00	295.94	265.72	253.10	0.00	263.39
	Wholesale	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Non-revenue	0.00	0.00	-204.74	-260.77	-279.00	-295.94	-265.72	24.83	0.00	23.16
	Total Production	0.00	0.00	0.00	0.00	0.00	0.00	0.00	277.93	0.00	286.55
PRIDDY VISTA		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PUGET SOUND NAVAL SHIPYARD		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ROCKAWAY BEACH WATER	SF Residential	0.00	0.00	0.00	0.00	1.01	5.01	4.94	5.61	5.48	5.66
	MF Residential	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Comm/Indust.	0.00	0.00	0.00	0.00	0.00	0.42	0.84	0.80	0.62	0.30
	Irrigation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL SOLD	0.00	0.00	0.00	0.00	1.02	5.43	5.78	6.41	6.10	5.95
	Wholesale	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Non-revenue	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.49	0.68
	Total Production	0.00	0.00	0.00	0.00	1.02	5.42	5.78	6.41	7.59	6.64
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ROCKY POINT WATER DISTRICT 12		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SANDY HOOK PARK COMMUNITY CLUB		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

System Name		Annual Water Sold (MG) 1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
SCENIC BEACH STATE PARK	SF Residential	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	MF Residential	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Comm/Indust.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Irrigation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL SOLD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Wholesale	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Non-revenue	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total Production	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SEABECK	SF Residential	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	MF Residential	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Comm/Indust.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Irrigation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL SOLD	0.00	0.00	0.00	0.00	5.54	4.79	4.36	6.14	5.63	6.92
	Wholesale	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Non-revenue	0.00	0.00	0.00	0.00	0.41	0.56	0.04	0.51	0.22	0.44
	Total Production	0.00	0.00	0.00	0.00	5.96	5.35	4.76	6.65	5.85	7.36
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SILVERDALE WATER DIST 16	SF Residential	0.00	326.35	303.56	388.20	396.07	397.38	394.43	443.70	413.05	430.41
	MF Residential	0.00	112.03	120.82	143.76	132.65	128.66	122.44	125.21	138.17	134.21
	Comm/Indust.	0.00	137.65	136.56	149.74	168.49	163.47	163.21	175.58	180.45	184.30
	Irrigation	0.00	36.35	28.15	28.31	43.31	41.90	38.28	51.41	42.49	49.93
	TOTAL SOLD	0.00	612.38	589.09	710.02	740.52	731.41	718.35	795.90	774.15	798.85
	Wholesale	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Non-revenue	0.00	55.34	41.80	1.72	50.08	57.40	46.16	50.63	27.90	52.55
	Total Production	0.00	667.71	630.89	711.74	790.60	788.81	764.52	846.53	802.05	851.40
		#VALUE!	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SOUTH BAINBRIDGE WATER SYSTEM INC		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

System Name		Annual Water Sold (MG) 1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
STRATTONWOOD		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
STRAWBERRY HILL	SF Residential	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	MF Residential	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Comm/Indust.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Irrigation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL SOLD	0.00	0.00	0.00	0.00	0.00	0.00	9.63	11.80	10.88	10.71
	Wholesale	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Non-revenue	0.00	0.00	0.00	0.00	0.00	0.00	0.83	0.83	0.78	1.24
	Total Production	0.00	0.00	0.00	0.00	0.00	9.67	10.46	12.66	11.67	11.95
SUBASE BANGOR		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SUNNYSLOPE WATER DISTRICT	SF Residential	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	MF Residential	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Comm/Indust.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Irrigation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL SOLD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Wholesale	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Non-revenue	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total Production	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SUQUAMISH	SF Residential	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	MF Residential	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Comm/Indust.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Irrigation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL SOLD	0.00	0.00	0.00	0.00	83.42	79.47	78.29	89.29	87.88	89.77
	Wholesale	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Non-revenue	0.00	0.00	0.00	0.00	3.91	3.88	7.80	7.20	7.28	10.40
	Total Production	0.00	0.00	0.00	0.00	87.33	83.35	86.09	96.49	95.16	100.17
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TAHUYEH LAKE COMMUNITY CLUB		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TRACYTON WATER DISTRICT		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

System Name		Annual Water Sold (MG)									
		1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
VIEWSIDE COMMUNITY WATER	SF Residential	0.00	0.00	0.00	0.00	0.00	0.00	4.77	4.77	4.77	4.77
	MF Residential	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Comm/Indust.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Irrigation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL SOLD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Wholesale	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Non-revenue	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.09	0.09	0.09
	Total Production	0.00	0.00	0.00	0.00	0.00	0.00	4.86	4.86	4.86	4.86
VINLAND	SF Residential	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	MF Residential	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Comm/Indust.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Irrigation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL SOLD	0.00	0.00	0.00	0.00	57.91	39.98	65.49	76.05	71.68	76.46
	Wholesale	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Non-revenue	0.00	0.00	0.00	0.00	0.69	8.12	8.23	4.28	6.63	9.86
	Total Production	0.00	0.00	0.00	0.00	64.76	68.10	73.72	80.33	78.30	86.33
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

System Name		Annual Water Sold (MG) 1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
WATAUGA BEACH	SF Residential	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	MF Residential	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Comm/Indust.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Irrigation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL SOLD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Wholesale	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Non-revenue	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total Production	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Survey Data – Storage

System Name	Name/Location	Total (MG)	Useable (MG)	Overflow Elevation (Ft.)
ALPINEWOOD				
ANNAPOLIS WATER DISTRICT	Salmonberry Ground	2.14	1.92	403
	Salmonberry Elevated	0.17	0.15	487
	Powell Reservoir	0.51	0.37	314
	Well #1 Aeration tank	0.10	0.05	119
	Karcher Reservoir	0.01	0.01	240
	Fircrest Elevated Reservoir	0.17	0.15	487
	Fircrest Sandpipe	1.00	0.30	487
APEX WATER SUPPLY INC		0.00	0.00	0
B K S		0.00	0.00	0
BAINBRIDGE ISLAND, CITY OF	1.0 MG High school reservoir	1.00	0.61	330
	1.5 MG High school reservoir	1.50	0.00	330
	0.3 MG Grand Ave	0.30	0.16	230
	0.2 MG Knechtel Way	0.20	0.00	230
BEAR CUB WATER ASSOC		0.00	0.00	0
BETHEL EAST		0.00	0.00	0
BILL POINT WATER		0.00	0.00	0
BREMERTON WEST 517 ZONE, CITY OF		0.00	0.00	0
BREMERTON, CITY OF	1	1,400.00	0.00	641.75
	2	202.00	0.00	265
	3	0.20	0.00	566.3
	4	11.00	0.00	255.9
	5	3.00	0.00	241.9
	6	0.15	0.00	447.3
	8	2.54	0.00	441
	10	1.21	0.00	517.4
	11	1.58	0.00	239.8
	12	2.00	0.00	397
	13	0.76	0.00	398
	14	2.00	0.00	229.2
	15	1.00	0.00	489.5
	16	1.00	0.00	238.9
	17	1.00	0.00	398.1
	18	1.00	0.00	489.4
	19	2.00	0.00	239.1
	20	1.00	0.00	398.1
	21	3.00	0.00	255.4
BRIDLETREE WATER CO INC	Bridletree	0.55	0.00	579.5
CEDAR GLEN MOBILE HOME PARK	Reservoir	0.30	0.00	0
DRIFTWOOD COVE	#1 View Drive	0.83	0.00	471.5
ELDORADO HILLS	#1 Brightway St.	2.54	0.00	651
EMERALD HEIGHTS	NW corner center sect. SW, SW4, NE4 33-25-2E	0.79	0.00	320.69

System Name	Name/Location	Total (MG)	Useable (MG)	Overflow Elevation (Ft.)
ERLAND POINT WATER CO		0.00	0.00	0
FROG POND WATERS INC		0.00	0.00	0
GALA PINES WATER	Gala way	0.50	0.00	385
GLENWOOD STATION		0.00	0.00	0
HARBOR HEIGHTS		0.00	0.00	0
HINTZVILLE ACRES		0.00	0.00	0
HOLLY		0.00	0.00	0
HORIZONS WEST		0.00	0.00	0
INDIANOLA WATER	#1 Division St.	0.50	0.00	260
	#2 Division St	0.50	0.00	260
	#4 Division St.	1.05	0.00	260
	#4 Gerald Cliff	0.30	0.00	260
	#5 Chruch Camp	0.50	0.00	260
ISLAND LAKE		0.00	0.00	0
ISLAND UTILITY		0.00	0.00	0
KEYPORT WATER	#1 Hwy 303	2.00	0.00	271
	#2 Old military	2.00	0.00	271
KITSAP WEST MOBILE HOME PARK		0.00	0.00	0
KRISTA FIRS	Krist Firs Reservoir	0.35	0.22	348
LITTLE TREE		0.00	0.00	0
LONG LAKE VIEW EST 2 5	#1 Ebbert	1.18	0.00	0
	#2 Ebbert	0.57	0.00	0
MAINLAND VIEW MANOR		0.00	0.00	0
MANCHESTER STATE PARK		0.00	0.00	0
MANCHESTER WATER DISTRICT		5.00 4.50	2.50	430
MARTELL MOBILE MANOR		0.00	0.00	0
MCCORMICK WOODS		0.00	0.00	0
MEADOWMEER WATER SERVICE ASSN		0.00	0.00	0
MILLER BAY	#1 Sunridge Way	0.53	0.00	372
	#2 Sunridge Way	1.14	0.00	372
NAVAL UNDERSEA WARFARE CTR DIV KEYP		0.00	0.00	0
NAVY YARD PARK	Navy Yard #1	0.70	0.00	337
	Navy Yard #2	0.40	0.00	337
NORTH BAINBRIDGE WATER CO INC		0.00	0.00	0
NORTH PENINSULA	#1 Timberline	0.45	0.00	240.5
	#2 N. Ritter	0.90	0.00	240.5
	#3 S. Ritter	1.20	0.00	333
	#4 S. Ritter	1.20	0.00	333
	#1 Kingsview Lp	1.30	0.00	333
	#2 Kingview Lp	1.90	0.00	333
	#3 272nd	2.75	0.00	333
	#4 S. Kingston Rd	2.50	0.00	333
	#1 Hansville Hwy.	7.12	0.00	485
	#1 Office	1.00	0.00	220

System Name	Name/Location	Total (MG)	Useable (MG)	Overflow Elevation (Ft.)
	#2 Office	1.00	0.00	220
	#3 Office	0.80	0.00	220
	#4 Office	0.80	0.00	220
	#1 Shorewood	0.55	0.00	220
	#2 Shorewood	0.55	0.00	220
	#1 Cliffside	0.80	0.00	220
	#2 Cliffside	0.80	0.00	220
	Kingston Farms	0.30	0.00	430
NORTH PERRY AVENUE WATER DISTRICT	Sunset #1	0.52	0.32	490
	Sunset #2	2.01	1.31	490
	Olympus #1	0.30	0.26	490
	Olympus#2	1.03	0.90	490
	Riddell	0.05	0.54	490
	Key Port tank	0.40	0.00	315
	Camtershive tank	0.50	0.00	345
	Riddell Tank	0.05	0.00	577
OLYMPIC VIEW MOBILE MANOR		0.00	0.00	0
PARKVIEW TERRACE		0.00	0.00	0
PINE LAKE MOBILE HOME EST 1 3		0.00	0.00	0
PORT GAMBLE - LOWER - CWS		0.00	0.00	0
PORT GAMBLE - UPPER- CWS		0.00	0.00	0
PORT MADISON WATER COMPANY		0.00	0.00	0
PORT ORCHARD WATER DEPT		0.00	0.00	0
POULSBO, CITY OF	Finn Hill Tank	0.50	0.00	244.5
	4th Ave Tanks	0.13	0.00	244.5
	Wilderness Park Tank	1.00	0.00	244.5
	Raab Park Tank	0.15	0.00	396
	Caldart Rd Tank	0.08	0.00	396
	Pugh Road Tank	1.00	0.00	514
	Lincoln Hill Tank	0.15	0.00	405
PRIDDY VISTA		0.00	0.00	0
PUGET SOUND NAVAL SHIPYARD		0.00	0.00	0
ROCKAWAY BEACH WATER	.125 MG Creosote Reservoir	0.13	0.06	0
ROCKY POINT WATER DISTRICT 12		0.00	0.00	0
SANDY HOOK PARK COMMUNITY CLUB		0.00	0.00	0
SCENIC BEACH STATE PARK		0.00	0.00	0
SEABECK	Seabeck #1	2.90	0.00	495
	Seabeck #2	2.90	0.00	495
SILVERDALE WATER DIST 16	Wixson Reservoir	0.00	0.00	628.5
	Dickey Reservoir	0.00		502.5
	Shasow Glen Reservoir	0.00		392.2
	Loretta Heights Reservoir	0.00		361
	Westwind Reservoir	0.00		361
	Shadow Glen Reservoir	0.00		361
	Eldorado Reservoir	0.00		222.2
	Provost Reservoir	0.00		223
	Chena Reservoir	0.00		223
	Ridgetop Reservoir	0.00		344.5

System Name	Name/Location	Total (MG)	Useable (MG)	Overflow Elevation (Ft.)
0	Island Lake Reservoir	0.00		485
	Island Lake Reservoir	0.00		485
	Bucklin Ridge Reservoir	0.00		344.5
	Spirit Ridge Reservoir			380
SOUTH BAINBRIDGE WATER SYSTEM INC		0.00	0.00	0
STRATTONWOOD		0.00	0.00	0
STRAWBERRY HILL	Strawberry Hill #1	0.40	0.00	0
	Strawberry Hill #2	0.40	0.00	0
SUBASE BANGOR		0.00	0.00	0
SUNNYSLOPE WATER DISTRICT	Reservoir #1	1.25	0.00	0
	Reservoir #2	2.50	0.00	0
SUQUAMISH	#1 Pintest	1.50	0.00	303
	#2 Pintest	0.70	0.00	303
	#3 Pintest	1.41	0.00	380
	#4 Estates	5.23	0.00	438
	#5 Lincoln Rd	1.00	0.00	250
	#6 Lincoln Rd	1.00	0.00	250
	#7Squamish Way	1.90	0.00	250
TAHUYEH LAKE COMMUNITY CLUB		0.00	0.00	0
TRACYTON WATER DISTRICT		0.00	0.00	0
VIEWSIDE COMMUNITY WATER	Source Reservoir	0.40	0.40	20ft.
VINLAND	#1 Pioneer Way	2.00	0.00	390
	#2 Olhava	1.80	0.00	481
	#3 Olhava	7.12	0.00	536
WATAUGA BEACH	Watauga Tank #1	0.25	0.00	140
	Watauga Tank #2	0.25	0.00	140
WICKS LAKE RANCHES		0.00	0.00	0
TOTAL		**1,776.04**		

Appendix

J Evaluation of Reuse and Desalination

Section J1
Introduction

The Kitsap County Water Utility Coordinating Committee (KCWUCC) is exploring various options for reducing potable water demand and more efficiently managing ground water resources. This appendix investigates the potential for water reuse and desalination to aid the KCWUCC in meeting these goals. These evaluations are important given the uncertainty in developing future water supplies, obtaining additional water rights, and enhancing existing well pumping capacities for sustained periods of time and with expected continued growth in the community.

The practice of water reuse, otherwise known as water reclamation, is fairly new to the Pacific Northwest region, though not to other areas such as the arid southwestern states. Reuse involves utilizing adequately treated wastewater or stormwater, typically for non-potable purposes. By using this as a source of water, the demand for potable drinking water can be reduced, providing relief for the raw water supplies in the area. Common non-potable applications of reclaimed water include land application (irrigation), commercial/industrial process and cooling water, wetland enhancement, and stream augmentation. There also exists the potential for indirect potable applications of such water. Most often, this takes the form of aquifer recharge, either through surface percolation or direct injection.

Due to its limited history, especially in the northwest, there are still many challenges associated with water reuse. Regulations pertaining to water quality and reliability are strict, in order to ensure public health and to protect the environment. Technologies are improving at a rapid pace to provide economical treatment solutions to address these regulations. Perhaps the single most challenging issue surrounding reuse is public perception. Public acceptance of this type of water supply, given its controversial past, is crucial to successful implementation of a reclamation project. To accomplish this, the public needs to be informed and involved early in the process.

Desalination is another means of providing an alternative water supply, via utilization of seawater. Cost and impracticality have discouraged the development of desalination in the past; however, there are projects underway elsewhere in the Country utilizing this technology. This appendix provides a review of water reuse regulatory and permitting requirements, potential sources and applications for water reuse, a summary of other reuse feasibility studies, an evaluation of reuse system costs, and a discussion of desalination.

Section J2
Regulatory Framework for Water Reuse Projects

Current State regulations pertaining to reclaimed water were developed based on Revised Code of Washington (RCW) 90.46, which sets forth the Washington State Legislature's finding that "to the extent reclaimed water is appropriate for beneficial uses, it should be so used to preserve potable water for drinking purposes" (RCW 90.46.005). The Washington State Departments of Health (DOH) and Ecology (Ecology) jointly review and regulate water reuse projects in order to ensure the safety of public health and the environment, while at the same time promoting responsible management of water resources. This section discusses the regulations and standards that have been developed for water reuse within Washington, the roles of DOH and Ecology, and how these items pertain to potential reuse projects in Kitsap County.

J2.1 Water Reuse Regulations and Standards

Many statutes and rules can be found in Washington State law pertaining to reclaimed water projects. A list of applicable laws and regulations is provided in Table J2-1.

In order to administer these laws, DOH and Ecology jointly published a set of guidelines for water reuse projects in September of 1997. This document, entitled Water Reclamation and Reuse Standards (Standards), defines the various degrees of wastewater effluent treatment necessary to produce usable reclaimed water and describes the requirements for application of such water.

J2.1.1 Required Levels of Treatment

The four levels of wastewater treatment required for reclaimed water are summarized in Table J2-2.

Class A reclaimed water has the most reuse potential and the least restrictions on its use. As noted in Table J2-2, the primary difference between Class A reclaimed water and the other classes is that Class A water must be coagulated and filtered. Even though it is not permitted for human consumption, Class A reclaimed water is required to be produced such that it meets most drinking water standards for raw water. With this extra element of public health protection provided, Class A is the category of reclaimed water usually required if any direct public exposure to the water is anticipated (e.g., irrigation of public parks, golf courses, etc.).

Table J2-1
Laws and Regulations that Apply to Reclaimed Water Projects

Statutes (RCWs) and Rules (WACs)	Application
Chapter 90.46 RCW Reclaimed Water	This statute is the basis for permitting, standards, and legislative intent of reuse projects. A key aspect of this law is the definition section. Please refer to specific definitions for reclaimed water, ground water recharge criteria, and reclamation criteria. The statute also provides that facilities that reclaim water shall not impair existing downstream water rights (RCW 90.46.130).
Chapter 90.48 RCW Water Pollution Control	This is the main statute for Ecology's authority to regulate domestic wastes from sewage treatment facilities.
Chapter 90.03 RCW Water Code and Chapter 90.44 RCW Regulation of Public Ground Waters	These statutes are the basis for the appropriation and beneficial uses of public waters. Use and distribution of the reclaimed water is exempt from the water rights permit requirements.
Chapter 43.20 RCW State Board of Health	This statute provides the authority for DOH to adopt rules (WACs) for sewage and drinking water systems.
Chapter 173-200 WAC Water Quality Standards for Ground Waters	This rule would apply, except as amended in Chapter 90.46 RCW, to any reclaimed water beneficial use that discharges to ground water.
Chapter 173-201A WAC Water Quality Standards for Surface Waters	This rule would apply to any reclaimed water that would discharge to surface waters of the State.
Chapter 173-216 WAC State Waste Discharge Permit Program	The rule would permit reclaimed water used for irrigation, impoundments, non-discharging wetlands (not regulated as waters of the State), and planned ground water recharge projects if no other permit existed to allow the generation of reclaimed water.
Chapter 173-220 WAC National Pollution Discharge Elimination System Program (NPDES)	This rule delegates to Ecology the NPDES permitting program from EPA and is one of the primary permits the agencies use for reclaimed water. A NPDES permit could be used for either land application of reclaimed water or certain commercial and industrial uses of reclaimed water.
Chapter 173-240 WAC Submission of Plans and Report for Construction of Wastewater Facilities	This rule governs the engineering submittal requirements for Ecology in addition to the guidance provided in the reclamation criteria.
Chapter 246-271 WAC Public Sewage	This rule covers the basic investigative powers of DOH for regulating municipal sewage system discharges and engineering documents. DOH issues approval of reclaimed water projects under this rule and the authority granted by Chapters 90.46 and 43.20 RCW.
Chapter 246-290 WAC Group A Public Water Systems	This rule establishes requirements for public water systems consistent with the Safe Drinking Water Act (SDWA) and other DOH statues and WACs. For reclaimed water projects, requirements for water system plans cross connections, design standards (distribution systems), and source protection may apply to specific projects.
Chapter 173-154 WAC Policies and Procedures	This rule establishes protection of upper aquifer zones from excessive water level declines or reductions in water quality.
Chapter 173-218 WAC Policies and Procedures	This rule establishes an underground injection control program for the injection of fluids through wells. This rule is applicable to reclaimed water that would discharge to ground water by way of an injection well.

Source: Washington State Department of Ecology, Criteria for Sewage Works Design.

Table J2-2
Levels of Wastewater Treatment for Production of Reclaimed Water

Reclaimed Water Category	Coagulated / Filtered[1]	Oxidized[2]	Disinfected[3]	Maximum Median Total Coliform	Maximum Total Coliform Count in Any Sample[5]
Class A	✓	✓	✓	2.2/100 mL	23/100 mL
Class B		✓	✓	2.2/100 mL	23/100 mL
Class C		✓	✓	23/100 mL	240/100 mL
Class D		✓	✓	240/100 mL	

(1) Coagulation refers to addition of chemicals for the purpose of destabilizing and agglomerating of suspended matter. Filtration refers to the process of passing oxidized, coagulated wastewater through filter media, such that the effluent's average turbidity does not exceed 2 nephlometric turbidity units (NTU), determined monthly, and does not exceed 5 NTU at any time.

(2) Oxidized wastewater has a biochemical oxygen demand (BOD) that does not exceed 30 mg/L, a total suspended solids (TSS) that does not exceed 30 mg/L, and a dissolved oxygen (DO) content greater than 0 mg/L.

(3) Disinfected wastewater is wastewater in which pathogenic organisms have been destroyed.

(4) As determined from the bacteriological results of the last 7 days for which analyses have been completed.

(5) Maximum amount in any given sample.

For applications where there is no public exposure (e.g., irrigation of restricted areas), reclaimed water of Class B or C is suitable. Class D reclaimed water has the least stringent treatment requirements and is suitable for only a few applications, including sanitary sewer flushing and surface irrigation of specific crops.[1]

J2.1.2 Redundancy and Reliability Requirements

The Standards also require that redundant treatment facilities be provided in order to ensure safe and reliably treated reclaimed water. This requirement can be met by having multiple treatment units for each process or by having standby processes (e.g., a standby chlorinator in the event that a UV disinfection unit fails). Reliability requirements include having alarms connected to all treatment units, emergency storage or disposal capabilities, and back-up power supplies.

J2.1.3 Operation and Maintenance Requirements

There are numerous operation and maintenance requirements relative to reclaimed water systems listed in the Standards. Some key elements are discussed below.

"Purple Piping"

All reclaimed water piping, valves, or other appurtenances must be color coded purple, taped purple, or marked in some clear way as to identify the source of water in the pipe as not being potable.

Cross-Connection Control

No cross-connections are permitted between reclaimed water and potable water systems. If potable water is used to supplement a reclaimed water system (e.g., in an irrigation system), an approved air gap separation must be installed between the two systems.

[1] Irrigation with Class D reclaimed water is allowed only for food crops, which undergo physical or chemical processing sufficient to destroy all pathogenic agents.

Reduced pressure principle backflow prevention devices or air gap separations are required where both reclaimed and potable water are supplied to a reclaimed water direct aquifer injection well. The minimum pressure difference between a reclaimed water line and any nearby potable water line is 10 psi.

Water Line Separation Distances

The minimum horizontal separation distance between a reclaimed water line and a potable water line is 10 feet. When crossing, reclaimed water lines must be at least 18 inches below potable water lines, and 12 inches above sanitary sewer lines.

Operator Certification

The Standards require that a reclamation plant be staffed with qualified personnel to operate the facility effectively to achieve the required level of treatment at all times. For plants producing less than 5 million gallons per day (mgd) of Class A reclaimed water, the required classification for operators is Wastewater Plant Operator III.

Operating and Maintenance Records

Clear documentation of operation and maintenance records is required. A monthly summary must be filed with DOH and Ecology, including information such as water quality analyses, unit process and equipment breakdowns, diversions to emergency storage or disposal, and any corrective or preventive actions taken.

J2.2 Roles of Regulatory Agencies

DOH and Ecology share the responsibility of regulating reclamation projects. As set forth by RCW 90.46.030, DOH is the lead agency on projects where commercial or industrial uses of reclaimed water are involved. Similarly, RCW 90.46.040 provides Ecology the authority to be the lead agency on projects involving land application (e.g., irrigation) of reclaimed water. In the case of other applications, the project proponent must coordinate with both agencies to determine who will take the lead.

In any case, an engineering report is reviewed by both agencies and relevant permits are administered by Ecology. The requirements for the engineering report are contained within the Standards. Essentially, the report covers the details of the proposed reclamation project and explains how compliance with all applicable standards will be maintained. In addition, the report must meet the requirements for submittal of plans and reports for construction of wastewater facilities (Washington Administrative Code (WAC) 173-240-060) and applicable sections from WAC 246-290 (e.g., cross-connection control, conservation and reuse planning).

Applicable permits are discussed in Section 3, including potential requirements within the National Pollution Discharge Elimination System (NPDES) program.

Section J3
Water Reuse Permitting Requirements

A key component of successfully implementing a water reclamation project is obtaining the necessary permits. As discussed in Section 2, both the Washington State Departments of Health (DOH) and Ecology (Ecology) are involved in the review of proposed projects; however, the primary permitting authority rests with Ecology. The following is a list of potential permits and other regulatory requirements water systems may need to address in association with water reuse projects.

J3.1 Waste Discharge Permit

Satisfying State permitting requirements under the Water Pollution Control Act, this permit may be utilized for water reclamation projects. Applications covered by the permit include irrigation, impoundments, use in non-discharging wetlands, and ground water recharge projects.

J3.2 National Pollution Discharge Elimination System Program Permit

Recently, Ecology has utilized this permit, which typically applies to point source discharges (e.g., wastewater treatment plants), for reclamation projects involving land application (irrigation) and commercial/industrial uses. Upon developing a specific reuse project, the water system would need to coordinate with Ecology to determine if a National Pollution Discharge Elimination System Program Permit (NPDES) or Waste Discharge permit is more appropriate.

J3.3 Utility Permit

This permit could be required from the Washington State Department of Transportation (DOT) in order to extend a transmission main conveying reclaimed water. This is a typical permit required of construction impacting highways.

J3.4 Submission of Plans and Report for Construction of Wastewater Facilities

The requirement of an engineering report was discussed in Section 2. Such a report must be filed with both DOH and Ecology before a reclamation project may be permitted and approved.

J3.5 State Environmental Policy Act Compliance

The purpose of the State Environmental Policy Act (SEPA) is to ensure that environmental values are considered during decisions by State and local agencies. As required by WAC 197-11, environmental information must be considered before committing to a particular course of

action. This includes identifying and evaluating any possible impacts to the environment by a proposed reclamation project. Initially, this will take the form of a completed environmental checklist. This document will then be reviewed by DOH and/or Ecology. A determination of non-significance, a mitigated determination of non-significance, or a determination of significance will then be made. Based upon this decision, an Environmental Impact Statement (EIS) may be determined to be necessary. Until a specific reclamation project is developed, it is difficult to determine if an EIS will be required. If it is, extra time and expense is typically associated with such an endeavor. Staff at DOH[2] has reported that for most recent reclamation projects, typically involving irrigation or use in wetlands, no EIS has been required. However, on applications that may have a more direct impact upon human health or potable water supplies (e.g., direct aquifer recharge), an EIS is more likely.

[2] Based upon phone conversations with Department of Health, Office of Drinking Water staff (January 2001).

Section J4
Potential Sources for Reclaimed Water

Depending on the scale of the water reclamation project, both large and small and private and public source could be used. Water reclamation on a larger scale primarily includes the use of wastewater effluent from water treatment plants. This section provides an analysis of the quantity of treated wastewater effluent in Kitsap County, as well as stormwater. Flow variations and characteristics will need to be considered on a case-by-case basis, in order to determine the available amounts of potential reclaimed water. Water quality parameters should also be analyzed to determine potential upgrades to existing treatment schemes necessary to produce usable reclaimed water.

J4.1 Wastewater Effluent

The best possible source of reclaimed water may be water from wastewater treatment and reclamation plants (WWTP). Industrial wastewater is another source that could be used to potentially reduce demand on municipal systems as well as reduce the amount of water used in industrial processes.

Monthly discharge monitoring reports for year 2001 were reviewed to determine the flow characteristics of wastewater effluent, both municipal and private, in Kitsap County (County). The National Pollution Discharge Elimination System (NPDES) Permits officially authorizes discharge of the wastewater to water bodies in the County. Table J4-1 provides a summary of 2001 effluent flow characteristics from both municipal and private NPDES permits. The permit ID number, facility name, location of outflow, average maximum flow limit, and flow through conduit or treatment plant records are included in Table J4-1 below. The NPDES Permits requires wastewater effluent to be of a certain quality. Ammonia, nitrate, Biological Oxygen Demand (BOD), Total Suspended Solids (TSS), and fecal coliform may be tested and regulated under the NPDES Permits.

Table J4-1
NPDES Permits In Kitsap County

			Flow through conduit or treatment plant (MGD) [1]			
NPDES ID	FACILITY NAME	OUTFALL LOCATION	Max limit	AV	AV MIN	AV MAX
MUNICIPAL						
WA0020907	BAINBRIDGE ISLAND, CITY OF	1220 DONALD AVE BAINBRIDGE ISLAND, WA 98110	0.85	0.49	0.44	0.59
WA0029289	BREMERTON, CITY OF	WASTEWATER TREATMENT PLANT BREMERTON, WA 98312	8.59	5.08	4.01	8.22
WA0023264	KINGSTON STP	10878 NEW KINGSTON ROAD KINGSTON, WA 98346	0.13	0.08	0.08	0.09
WAG503199	KITSAP COUNTY PUBLIC WORKS	10833 NW HOLLY RD SILVERDALE, WA 98383	ND	ND	ND	ND
WAG503151	KITSAP COUNTY PUBLIC WORKS	12299 SIDNEY ROAD SW PORT ORCHARD, WA 98366	ND	ND	ND	ND
WAG503152	KITSAP COUNTY PUBLIC WORKS	8824 DICKEY RD NW SILVERDALE, WA 98383	ND	ND	ND	ND
WAG503123	KITSAP COUNTY PUBLIC WORKS	WEST END OF LOVGREN RD BAINBRIDGE ISLAND, WA 98110	ND	ND	ND	ND
WAG503124	KITSAP COUNTY PUBLIC WORKS	ON HOLLY RD 2 MILES EAST OF SEABECK, WA	ND	ND	ND	ND
WAG503125	KITSAP COUNTY PUBLIC WORKS	AKA CHICO PIT BREMERTON, WA 98310	ND	ND	ND	ND
WAG503126	KITSAP COUNTY PUBLIC WORKS	NE CORNER OF PIONEER WAY & PORT ORCHARD, WA	ND	ND	ND	ND
WA0030520	KITSAP COUNTY PUBLIC WORKS	CENTRAL KITSAP WWTP POULSBO, WA 98370	5.10	3.21	2.95	3.55
WA0031445	KITSAP COUNTY SANITARY LANDFILL	HANSVILLE RD HANSVILLE, WA 98340	ND	ND	ND	ND
WA0030317	KITSAP COUNTY SEWER DIST #7	FORT WARD ESTATES, WA 98006	0.12	0.03	0.03	0.03
WA0023701	MANCHESTER (KITSAP COUNTY)	8020 EAST CARAWAY ROAD	0.20	0.20	0.17	0.29
WA0020346	PORT ORCHARD, CITY OF	366 BEACH DRIVE PORT ORCHARD, WA 98366	2.38	1.45	1.34	1.60
WA0023256	SUQUAMISH STP (KITSAP COUNTY)	1800 SUQUAMISH WAY NE SUQUAMISH, WA 98392	0.17	0.17	0.14	0.31

Table J4-1 (cont)
NPDES Permits In Kitsap County

NPDES ID	FACILITY NAME	OUTFALL LOCATION	Flow through conduit or treatment plant (MGD) [1] Max limit	AV	AV MIN	AV MAX
PRIVATE						
WAG503253	ACE PAVING CO INC	END OF WILKERSON RD BREMERTON, WA 98312	ND	ND	ND	ND
WAG503256	ACE PAVING CO INC	9000 WERNER RD BREMERTON, WA 98312	ND	ND	ND	ND
WAG503257	ACE PAVING CO INC	10000 DICKEY RD SILVERDALE, WA 98383	ND	ND	ND	ND
WAG503272	ARMSTRONG, DAVID H.	1436 SW COOK RD PORT ORCHARD, WA 98366	0.85	0.49	0.44	0.59
WAG503254	BO-MAC GRAVEL CO	PORT ORCHARD, WA	ND	ND	ND	ND
WAG503115	CHAMBERS CONSTRUCTION INC	4.4 MILES N KINGSTON ON SR104 PORT GAMBLE, WA	ND	ND	ND	ND
WA0025194	EPA	MANCHESTER, WA	ND	ND	ND	ND
WAG503179	FRED HILL MATERIALS INC	POULSBO PLANT POULSBO, WA 98370	ND	ND	ND	ND
WA0031526	GLOBAL AQUA CLAM BAY	CLAM BAY ADJACENT TO RICH PASS MANCHESTER, WA 98353	ND	ND	ND	ND
WA0031534	GLOBAL AQUA FORT WARD	600 ERICKSEN AVE NE, STE 370	ND	ND	ND	ND
WA0031542	GLOBAL AQUA ORCHARD ROCKS	600 ERICKSEN AVE NE, STE 370 BAINBRIDGE ISLAND, WA 98110	ND	ND	ND	ND
WA0031551	GLOBAL AQUA VIKING SITE	600 ERICKSEN AVE NE, STE 370 BAINBRIDGE ISLAND, WA 98110	ND	ND	ND	ND
WA0030449	GLOBAL AQUA-USA INC	FORT WARD BAINBRIDGE ISLAND, WA 98110	ND	ND	ND	ND
WAG503204	HENRIETTA B. LEWIS TRUST	50 TJ LEWIS RD NW & CROSBY, WA	ND	ND	ND	ND
WAG503247	HILL, FRED	8430 BARNEY WHITE RD PORT ORCHARD, WA	ND	ND	ND	ND
WAG030073	KEYPORT UNDERSEA	WARREN E POSTEN KEYPORT, WA 98345	ND	ND	ND	ND
WAG030027	KITSAP MARINE INDUSTRIES	KITSAP CO SD #6, WA	ND	ND	ND	ND
WAG503171	KITSAP QUARRY INC	4399 WEST KITSAP LAKE RD BREMERTON, WA 98312	ND	ND	ND	ND
WAG503242	KITSAP READY MIX	2000 MULLENIX RD PORT ORCHARD, WA 98366	ND	ND	ND	ND
WAG030080	LIBERTY BAY MAINE WAYS INC	EARL MILLER POULSBO, WA 98370	ND	ND	ND	ND
WAG503186	MCCORMICK LAND CO	NW 1/4 SW 1/4, S19, T23N, R1E	ND	ND	ND	ND
WA0023469	MESSENGER HOUSE CARE CENTER	10861 NE MANITOU PARK BLVD	0.01	0.01	0.01	0.01
WA0023649	MESSENGER HOUSE CARE CENTER	, WA	ND	ND	ND	ND
WAG503245	MORRISON GRAVEL INC	9200 SW PARNEY WHITE RD POULSBO, WA 98370	ND	ND	ND	ND
WAG503246	MORRISON GRAVEL INC	1004 SE SPENCER ROAD PORT ORCHARD, WA 98366	ND	ND	ND	ND
ST0005185	T & C PHOTO LAB INC	20377 VIKING AVE NW, POULSBO, WA 98370	ND	ND	ND	ND
WA0022292	POPE & TALBOT INC	PUGET AVE PORT GAMBLE, WA 98364	0.02	0.01	0.01	0.02
WAG030089	PORT ORCHARD MARINE RAILWAY	ALBERT LIESEKE PORT ORCHARD, WA 98366	ND	ND	ND	ND
WAG503263	PORT ORCHARD SAND & GRAVEL CO	12800 SIDNEY RD SW PORT ORCHARD, WA 98366	ND	ND	ND	ND
WAG503264	PORT ORCHARD SAND & GRAVEL CO	8857 DICKEY RD NW SILVERDALE, WA 98383	ND	ND	ND	ND
WAG503265	PORT ORCHARD SAND & GRAVEL CO	7000 WERNER RD BREMERTON, WA 98310	ND	ND	ND	ND
WAG503266	PORT ORCHARD SAND & GRAVEL CO	IMPERIAL WAY BREMERTON, WA 98310	ND	ND	ND	ND
WA0026166	PORT ORCHARD, CITY OF (SLUDGE)	1165 BEACH DRIVE EAST PORT ORCHARD, WA 98366	ND	ND	ND	ND
WAG503251	RV ASSOCIATES INC	END OF HOLMAN RD PORT ORCHARD, WA	ND	ND	ND	ND
WAG503252	RV ASSOCIATES INC	TREMONT STREET PORT ORCHARD, WA	ND	ND	ND	ND
WA0045390	SCAB ROCK FEEDERS INC	WEST END OF LONGREN RD WINSLOW, WA 98858	ND	ND	ND	ND
ST0074707	SOUND PUBLISHING INC	7689 DAY RD BAINBRIDGE ISLAND, WA 98110	ND	ND	ND	ND
WAG503128	ZIMMER CONSTRUCTION CO INC	NE 1/4, SEC 26, T27N_R01E WM KINGSTON, WA	ND	ND	ND	ND
US NAVY						
WA0002062	DEFENSE, NAVY	PUGET SOUND NAVAL SHIPYARD BREMERTON, WA 983145001	ND	ND	ND	ND
WA0026026	DEFENSE, NAVY	NAVAL UNDERSEA WARFARE DIV KEYPORT, WA 98345	ND	ND	ND	ND
WA0002780	DEFENSE, NAVY	467 W STREET BREMERTON, WA 983145100	ND	ND	ND	ND
WA0025577	DEFENSE, NAVY	7000 FINBACK CIRCLE SILVERDALE, WA 983157000	ND	ND	ND	ND
ST0007353	USN UNDERSEA WARFARE CENTER	KEYPORT WA 98345	2	2	2	2
ST0007374	USNAV PUGET SOUND SHIPYARD	BREMERTON, WA 98314	2	2	2	2
ST0007363	USNAV SUBMARINE BASE BANGOR	SILVERDALE WA 98315	2	2	2	2

1 Approximate values from the Department of Ecology WPLCS Facility Data Analysis Reports

There are approximately 16 municipal WWTPs in the County but only six currently discharge a large enough quantity to be considered for a reuse project. The volumes of discharges vary with the largest effluent flows being from the Bremerton, Central Kitsap, and Port Orchard wastewater treatment plants.

Wastewater treatment plants are a good source for water reuse. The total average day wastewater effluent from WWTPs in the County is 10.71 million gallons per day (mgd) compared to the current 27 mgd average daily potable water use, based on available data. Reuse could be effective in reducing demand on public water systems but the water savings may be limited by demand for reclaimed water and high distribution costs.

Wastewater from industrial plants is another potential water source that could be reused either within the industries operations or externally to meet other water needs. Wastewater effluent flows were obtained for only a portion of the industries in the County. Based on the available data, some industrial effluent flows are highly seasonal due to industrial operations. Industrial wastewater flows are small compared to municipal flows.

J4.2 Stormwater

Stormwater is another potential source of reclaimed water. Stormwater can be utilized for reclamation purposes. However, there are two main factors that make stormwater reuse less desirable than wastewater reuse: seasonal variations in flow and the potential for highly unpredictable water quality. Water rights would also need to be obtained in order to reclaim stormwater. In general, wastewater reuse is more appropriate than stormwater reuse for the applications most likely to be implemented within the County. Improved diversion of larger quantities of storm water to recharge is a potentially attractive process that can be pursued on both a small and large project basis.

Stormwater flow is incompatible with many water reclamation options because high flows occur during winter months and low flows occur during summer months. In the summer, when reuse applications such as irrigation and cooling tower use require the greatest amounts of reclaimed water, the amount of available stormwater is at its lowest during the year. Rainfall during summer months is minimal, and any winter stormwater volumes detained are gone by mid-summer due to evaporation and infiltration. Without large storage facilities retaining winter stormwater for summer use, stormwater reuse does not provide an adequate volume of water for these applications.

Other water reclamation applications may be able to make use of the timing of stormwater flows. Direct aquifer recharge is independent of time of year, and can utilize large volumes of reclaimed water during the winter. This process is referred to as Aquifer Storage and Recovery (ASR). Stormwater reuse is attractive for this application. However, treatment requirements remain the same as those for reclaimed wastewater effluent, in order to produce high quality water for reuse. Therefore, additional infrastructure would be needed to consolidate and treat the stormwater. These capital improvements would be much greater than those needed to enhance the already existing treatment facilities associated with wastewater.

Stormwater typically contains many contaminants, originating from various sources, both natural and man-made. Many constituents of stormwater (e.g., metallic elements, oils, greases) are largely derived from vehicles. Increased attention is being focused on stormwater quality by municipalities, as it affects the water quality of surface water bodies into which it is discharged, and also presents an obstacle for potential reuse of the resource.

Section J5
Options for Reclaimed Water Application

There are many possible uses for reclaimed water which have political, technical, and financial implications that encourage or discourage various reclaimed water applications. The Central Puget Sound Regional Water Supply Outlook prepared by the Central Puget Sound Water Suppliers Forum divided reclaimed water applications into three categories: "Direct Potable," "Non-Potable", and "Indirect Potable," reuse application. After the application category has been considered, proximity and cost are important factors when determining the feasibility of the reuse scenario. The issues surrounding the use of reclaimed water include, but are not limited to, regulatory, technical, environmental, legal, financial, public acceptance, and political issues. Some tend to drive water planning in the direction of increased use of reclaimed water, and some drive in the opposite direction. The public level of concern relative to reuse varies widely, and tends to depend on the end use of the reclaimed water.

"Direct Potable" Reuse: Although it may be technically feasible, the public currently views "direct potable" use of reclaimed water for drinking purposes skeptically. However, the public generally has little concern for using reclaimed water for other purposes such as irrigating a golf course. "Direct potable" means a "pipe-to-pipe" connection between the reclaimed water treatment facility and the potable water distribution system. Washington State regulations do not provide for "direct potable" reuse, and it is not done anywhere in the United States except in a scientific research setting.

"Non-Potable" Reuse: "Non-potable" uses have the greatest potential application to this region. The types of uses approved by the State standards include irrigation of non-food crops; irrigation of food crops; landscape irrigation; discharge to impoundments; use in fish hatchery basins and decorative fountains; flushing of sanitary sewers; street cleaning; washing of corporation yards and lots and sidewalks; dust control; dampening of soil for compaction at construction sites; landfills; water jetting for consolidation of backfill; fire fighting and protection; toilet and urinal flushing; washing aggregate and making concrete; industrial boiler feed; industrial cooling; and, industrial process. As can be seen from this list, the variety of potential uses are many and varied. Although all are considered non-potable uses, some will likely be more controversial from the public's perspective than others.

Generic "Indirect Potable" Reuse: In "indirect potable" reuse, a highly-treated reclaimed water is intentionally introduced to a surface water or ground water system that is ultimately used as part of a municipal potable water supply. In an indirect system, the reclaimed water is blended with the natural water system and there is often a significant time delay (i.e., 12 or more months) in which the water receives additional natural treatment before the blended water is withdrawn for treatment at a potable treatment facility.

Indirect potable use refers to the "planned" and controlled use of the reclaimed water. "Unplanned" indirect potable use has been practiced for decades throughout much of the United States, including Washington, whenever treated municipal wastewater from one city is

discharged to a receiving stream or river and the cities downstream use the same water body as their potable water supply source. This occurs many times on most major watercourses. Indirect potable reuse is also practiced when effluent from septic tanks or other land treatment systems reaches ground water.

Some applications of indirect potable use involve a method of storage and could be used to offset pressure on existing municipal water supply sources to meet growing demands.

J5.1 Specific Application Scenarios

There are many possible application scenarios that could be implemented in the County and irrigation, wetland augmentation, and direct aquifer recharge may be good candidates. Application options vary between reuse scenarios depending on the community needs and proximity to the water source. Proximity to the water source is a key in minimizing construction costs associated with treatment and transmission of the reclaimed water. Required treatment levels for different applications are also a factor. If reclaimed water is applied in a public area the reclaimed water must be of Class A quality. This may require additional treatment modifications to an existing outflow.

J5.1.1 Irrigation

Utilizing reclaimed water for landscape irrigation purposes reduces the amount of water demand currently being met by potable water supplies. Parks, school grounds, golf courses, and agriculture are examples of areas that provide opportunities for reuse as they have significant irrigation requirements in the summer.

Enhancements to water treatment facilities may be needed in order to produce the appropriate Class of reclaimed water. For Class A specifically, the water must be coagulated, filtered, and disinfected to a greater degree. To accomplish this, the recommended approach is to provide additional facilities at the end of the existing treatment train. These additions would include an in-line coagulation/filtration system (very commonly used to meet tertiary and reuse standards) and an in-line UV disinfection unit, which, in conjunction with the current chlorination facilities, will treat water to Class A levels. If the irrigation is not used in public areas the treatment requirements may not be as stringent.

All facilities must meet requirements as set forth in the Water Reclamation and Reuse Standards (Standards). Such requirements include providing redundant treatment units and color-coding transmission piping as purple.

Costs associated with treatment, pumping, and transmission facilities will occur. Other costs such as engineering, administration, and permitting should be included and annual operation and maintenance costs considered.

J5.1.2 Maintenance of Existing Wetlands

This application involves the discharge of reclaimed wastewater effluent into wetlands. This is an attractive option for many municipalities, since Class C and D reclaimed water (i.e., those categories requiring the least amount of additional treatment) are often allowed in this application, assuming that there is no direct human contact with the receiving wetlands.

Capital improvements associated with this option may include necessary modifications to the existing treatment system and discharge arrangement to the wetlands.

Costs associated with this option include transmission costs, potential permitting and maintenance costs.

J5.1.3 Direct Aquifer Recharge

Application of reclaimed water will result in reducing potable water demands by non-potable uses. However, there are other applications of wastewater reuse that do not necessarily address this objective, but also warrant investigation. One of these is direct aquifer recharge, or the injection of reclaimed water into a ground water supply used to meet potable water demands. Such an application can make beneficial use of reclaimed water year-round in order to maintain or enhance the production of an aquifer.

As growth continues and pressures increase upon the aquifer, enhancement of ground water supplies may prove just as beneficial as reduction in potable water demand. In order to implement such an application of reclaimed water, requirements are greater than those associated with the wetland and irrigation. This is due to the fact that the reclaimed water is being injected directly into a potable water supply. For this reason, extra precautions are taken to ensure public health.

To address water quality issues, the Standards require that reclaimed water to be injected into potable ground water aquifers meet the criteria for primary contaminants (except nitrate), secondary contaminants, radionuclides, and carcinogens listed in WAC 173-200, as well as any other maximum contaminant levels provided in WAC 246-290. Additional requirements include:

- A strict monitoring procedure outlined for coliform. The number of total coliform present in any sample must not exceed 5/100 mL. This is more stringent than the requirements for general Class reclaimed water, which must meet a 23/100 mL standard.
- Turbidity must be less than or equal to 0.1 nephlometric turbidity units (NTU) (average) and 0.5 NTU (maximum).
- Total nitrogen must be less than or equal to 10 mg/L as N.
- Total Organic Carbon (TOC) must be less than or equal to 1.0 mg/L.

Furthermore, there are requirements relating to the proximity of injection points to water supply wells. The key requirement is that reclaimed water must be retained underground for a minimum of 12 months prior to being withdrawn. This is accomplished by locating the injection well outside of the one-year capture zone of any water supply well. To ensure that water quality requirements are met, two monitoring wells are required along the ground water flow path between the injection and water supply wells (one located 500 feet from the injection well, and the other at a distance of 1,000 feet).

Therefore, this application involves the following overall reclamation scheme:

- All treated wastewater effluent (in summer and winter) is sent through additional treatment processes of filtration and disinfection;
- Reclaimed water is pumped to the point of injection via a separate transmission main; and,
- Reclaimed water is then pumped into the ground water aquifer via a direct recharge injection well. It should be noted that this application might occur year-round, as opposed to the seasonal uses associated with the other options.

Aquifer recharge may require capital improvements associated with treatment, filtration, and disinfection processes. A separate transmission main is required to convey water to the injection well because reclaimed water is not permitted to be used as (mixed with) potable water. No storage is required, as all water would be sent directly into the aquifer. Further analysis is required to determine details concerning the injection and monitoring wells.

A cost estimate should include costs for additional treatment units, pumping, transmission facilities, and injection and monitoring wells. Other costs such as engineering, administration, and permitting should be included.

Section J6
Feasibility Studies

Since water reuse is a relatively new and high-cost practice there are no large-scale reuse projects and few reuse feasibility studies in Kitsap County (County). The Annapolis Water District and the City of Bremerton have conducted water reuse feasibility studies, which are summarized below. Also summarized is a reuse and storage study conducted as a part of the Water Resource Inventory Area (WRIA) 15 watershed planning effort.

J6.1 Annapolis Water District

With increasing demand and uncertainty in developing additional water rights, the Annapolis Water District had a water reuse feasibility study completed in November 1996. The wastewater treatment plant (WWTP), which discharges an average of 1.80 million gallons per day (mgd) of effluent, was identified as the reclaimed water source. After considering possible applications for the reclaimed water, aquifer recharge was determined to be the most beneficial use. The project included the construction of the reclaimed water main from the WWTP to the Salmonberry well field and the ground water recharge ponds or direct ground water injection. A secondary benefit to utilities could be the development of distribution lines that could deliver the water to large irrigators.

The reclamation scenario included the development of a water main, pump station, infiltration pond, and additional treatment for groundwater infiltration. Cost estimates developed with each step of the reclamation operation are as follows:

Reclaimed water main	$720,000
Pump station	$158,000
Infiltration Pond construction	$334,000
Additional treatment for ground water infiltration	$1,365,000
Contingencies/Tax/Field Admin./Contractor fees	$1,936,000
Total	$4,800,000

Annapolis Water District determined that this scenario was not feasible at this time.

J6.2 City of Bremerton

The City of Bremerton had a water reuse feasibility study conducted by Brown and Caldwell that was completed September 17, 1998. The City recognized the potential benefits to reuse for their system, which included preserving limited potable water supplies by offsetting potable water demand by non-potable applications, and reducing the total wastewater effluent discharges into Sinclair Inlet. The Bremerton WWTP was identified and the source of reclaimed water. At the time of the study the WWTP was designed for an annual average flow of 7.6 mgd and on a consistent basis 3.0 mgd of reclaimed water could be made available.

Various water applications were considered and a recommended alternative was established. The alternative included treating the wastewater to Class A standards and using the water to serve non-potable uses for the Port of Bremerton, Gold Mountain Golf Course, and Pendergast Park. The reclaimed water demand for all of the uses is 477 gallons per minute (gpm) or approximately .7 mgd. The total cost to implement this alternative was estimated to be $12,700,000, with a levelized unit cost of $6.41 per hundred cubic feet (ccf).

J6.3 WRIA 15 Reuse Study

Golder Associates, Inc. conducted a reuse study and storage assessment for the WRIA 15 Planning Unit in May 2003. The purpose of the study was to investigate the potential for using reclaimed water from wastewater treatment plant outflows as a source of water that could be stored and used to replenish or augment natural freshwater systems. The study did not evaluate other uses of reclaimed water that might offset potable water demands, but focused instead upon environmental uses of reclaimed water.

The study considered upgrade needs for the four largest treatment plants within WRIA 15 (Bremerton, Central Kitsap, Port Orchard, and Gig Harbor), as well as various freshwater augmentation scenarios. Eight alternatives were evaluated, ranging in cost from approximately $5.5 million to $8.5 million, and providing between 0.5 and 2.1 mgd in reclaimed water flows.

Section J7
Implementation

Successful implementation of a wastewater reuse project is dependent upon a variety of factors. The key elements include coordination with regulatory agencies, obtaining necessary permits, and developing an adequate financing strategy. The roles of the Washington State Departments of Health (DOH) and Ecology (Ecology) have been described in this Section. Both agencies advocate the use of reclaimed water as part of effective water resource management and stewardship. Early and continued contact with both DOH and Ecology will aid in implementation of a proposed reuse project. The permitting requirements associated with reclamation projects have also been summarized. These requirements are applicable to most wastewater capital improvement projects and as such do not involve additional requirements or different timelines relative to reuse projects.

J7.1 Cost

The cost associated with reuse varies depending on the required treatment levels, economies of size, and required conveyance construction. A summary of water reclamation projects in western Washington shows that the capital costs for reuse projects range from $100,000 to $32,000,000, for a variety of capacities. Operation and maintenance (O&M) costs are also a factor and vary depending on the type of water reuse project. The cost per amount of water reused ranges from $15,000 to $924,000 per million gallons per day (mgd). Table J7-1 provides an example of reuse projects and associated costs in Snohomish, King, and Pierce Counties.

Based upon costs for other facilities similar to what exist in Kitsap County, and considering cost estimates presented in the City of Bremerton water reuse feasibility study, an estimated of treatment upgrade costs for a reuse facility at an existing waste water treatment plant in Kitsap County is approximately $2,000,000 per mgd of capacity. Annual O&M costs associated with operating a facility of this size are estimated to be on the order of $150,000.

J7.2 Financing

One element not discussed thus far is that of financing reuse projects. There are many options available to water systems for funding reuse projects. The following is a list of both external and internal funding opportunities, many of which have been previously utilized. Table J7-2 provides important contact information concerning the external funding sources. Either solely, or in various combinations, these sources can provide adequate funding for the types of reclamation projects described earlier in this report.

Table J7-1
Summary of Reclaimed Water Projects in Snohomish, King, and Pierce Counties

County	Status[1]	Project	Previous/ Current Water Source	mgd	Intended Use
Snohomish	In Operation	WWTPs	Unknown	Unknown	In-plant use
Snohomish	In Design/ Construction	Kimberly-Clark Paper Mill	City of Everett	4[3]	Non-contact cooling in heat exchanger
Snohomish	Planning/ Development	Poplar tree farm	New development	1.5	Irrigation–tree farm
Snohomish	Feasibility Stage	Old Weyerhaeuser Mill Site	New development	Unknown	Industrial cooling
Snohomish	Feasibility Stage	Everett Parks	City of Everett	Unknown	Irrigation–golf & parks
Snohomish	Feasibility Stage	Nursery	City of Everett	Unknown	Irrigation–plants
King	Operational 2000	City of Snoqualmie –golf course	New development	1.5	Irrigation–golf & public landscaping
King	Operational 1994	West Point treatment plant	SPU	0.7	In-plant use & irrigation–public landscapes
King	Operational 1996	Renton treatment plant	Renton	1.3	In-plant use & irrigation–public landscapes
King	Operational	Fort Dent Park in Tukwila	Tukwila	0.1	Irrigation–ball fields
King	Planning/ Development	Lakehaven Utility District–Mirror Lake	Lakehaven Utility District	0.7–2.0	Groundwater recharge through septic systems
King	Planning/ Development	Pilot satellite plant	River	3	Non-potable
Pierce	Operational 1984	Chambers Creek Treatment Plant	City of Tacoma	1	Non-potable, process
Pierce	Planning/ Development	Chambers Creek Properties	New development	Unknown	Irrigation–golf
Pierce	Planning/ Development	Existing Orting New Cascadia	Orting New development	1	Irrigation–golf, school, parks
Pierce	Planning/ Development	Crystal Mountain	New development	0.1	Snowmaking & irrigation–landscape
Pierce	Planning/ Development	Mt Rainier Resort-Park Junction	New development	0.1	Irrigation–golf/public landscape & HVAC
Pierce	Feasibility Stage	Simpson Tacoma Kraft Mill	City of Tacoma	10	Non-potable
Pierce	Feasibility Stage	Stone Consolidated Mill[6]	River	5.2	Non-potable

WWTP = wastewater treatment plant ccf = 100 cubic feet mgd = million gallons per day.

Footnotes:

1 In Operation = Currently Operating; In Design/Construction = Funds Committed, Construction or operation imminent; In Planning/Development = Some thought, possible concept report; Feasibility Stage = Discussion but no detail on specifics
2 Financial calculations based on 25-year life, 6% interest rate unless otherwise noted.
3 Uses 8 mgd of reclaimed water, replaces 4 mgd potable.
4 Marginal cost only.
5 Based on capital costs only as O&M not readily available.
6 Going out of business but site could be redeveloped.

Table J7-2
External Funding Agency Contacts

Program	Address	Phone	Fax	Internet
Centennial Clean Water Fund	Department of Ecology P.O. Box 47600 Olympia, WA 98504-7600	(360) 407-6566	407-6426	www.wa.gov/ecology
State Revolving Loan Fund	Department of Ecology P.O. Box 47600 Olympia, WA 98504-7600	(360) 407-6566	407-6426	www.wa.gov/ecology
Public Works Trust Fund	Public Works Board P.O. Box 48319 Olympia, WA 98504-8319	(360) 586-7186	664-3029	www.ocd.wa.gov

J7.3 Centennial Clean Water Fund

The Centennial Clean Water Fund (CCWF) is available to local governments and tribes for measures to prevent and control water pollution. Both grants and loans are available on a yearly funding cycle.

CCWF is the largest State grant program, and is administered by Ecology. It provides grants for planning, design, and construction of facilities and other activities related to water quality. In 1996 the CCWF changed its application process and eligibility criteria. The primary focus of the program is pollution prevention and funding projects with a quantifiable water quality benefit. The CCWF funding cycle requires that applications be submitted by mid-February.

Each public body is limited to a maximum of five funded projects per year, with a maximum of $2.5 million available for each of two projects, and a limit of $250,000 per project for the remaining three projects. Grant funding of 50 to 75 percent of a project is available depending on the type of project.

Funding from this program is not available to provide excess capacity, but must be used to meet existing residential needs. Funding can also not be used to provide a source of supply. Funds are available to protect a source of water supply, as well as funding of water conservation or water reuse projects. Grants and loans from this program are also available for wellhead protection activities.

J7.4 State Revolving Loan Fund

Similar to the CCWF, the State Revolving Loan Fund (SRF) is administered by Ecology and is available to local governments and tribes for measures to prevent and control water pollution. Only loans are available through this fund.

Loans are available for up to 100 percent of eligible project costs. Current terms for fiscal year 2002 are 0.5 percent interest rate for a 0- to 5-year term and 1.5 percent interest rate for a 6- to 20-year term.

J7.5 Public Works Trust Fund

The Public Works Trust Fund (PWTF) is a loan program set up by the Legislature to assist cities, towns, counties, or special districts with funding for different types of public works projects. The projects can include streets, roads, drainage systems, water systems, and sanitary sewer systems. The emphasis of allocating funds for water and sewer systems is based on replacement and/or repair of existing systems. No funds will be allocated to install a new system. Rather, funds will be granted to rehabilitate or replace an existing system serving an existing population.

The loans are issued at up to 2 percent interest rate for a maximum term of 20 years for applications requesting 95 percent funding of project. The interest rate decreases to 0.5 percent when municipalities provide 15 percent of the project funding. Debt service coverage is not imposed on the PWTF loan. As minimum qualifications, the PWTF does require that cities impose a ¼ percent excise tax on the sale of real property and that they have a well-defined capital improvement program for the utility.

J7.6 Rate Revenues

One way in which the water systems could partially fund a reuse project is by utilizing a portion of the revenue generated from water and/or wastewater rates. A more thorough analysis of rate impacts, due either to use of funds directly for such projects or for repayment of loans from external sources such as those mentioned above, would be required before a decision is made to use money generated from rates.

Section J8
Desalination

Desalination is another potential process for alternative water supply that uses seawater to produce fresh water for potable or non-potable applications. Cost and impracticability has discouraged the development of desalination in the past. However, with shrinking potable water supplies and increasing demand, greater evaluation and implementation of desalination is occurring. Projects are underway in areas such as Florida and Southern California. Recently, improved technology has made desalination more economical and there are more than 12,500 plants in the United States.

There are two major processes for desalination: multi-stage flash desalination (MSF) and membrane-based reverse osmosis. Electrodialysis is another process that is used to desalt brackish water. Newly designed multi-effect distillation plants are also gaining interest.

MSF is the most widely used method which involves heating saline water to high temperatures and passing it through vessels of decreasing pressures to produce the maximum amount of water vapor (fresh water). Multi-effect distillation operates at lower temperatures but uses the same process. Vapor compression distillation is generally used in combination with either process, where the heat evaporating water comes from compression of vapor, rather than the direct exchange of heat.

Reverse osmosis and electrodialysis are both membrane processes. Reverse osmosis is a pressure driven process which forces saline water through a membrane leaving salts behind. Electrodialysis is a voltage driven process and uses an electric potential to move salts selectively through a membrane, leaving fresh water behind.

Costs associated with desalination vary depending on the salinity and temperature of the injection water, recovery rates, power costs, and economy of size. The more salt that is in the water the more processing is required and costs are increased. Desalting seawater costs three to five times more than, desalting brackish water. Energy costs can represent 50 to 75 percent of the desalination operating cost. Reverse osmosis requires the least energy, which makes the process desirable for areas with limited energy resources and as energy cost in general increase. Economies of size are also important determinates in project costs. The membrane filtration is the least dependant on economies of size.

Additional costs include costs associated with environmental protection. The disposal of brine, which is the output of the desalination process, could have a negative effect on the environment and must be disposed of properly. Marine impacts and ground water salinity are issues associated with brine disposal. Many times there is a cost associated with this disposal.

Many more recent and planned desalination projects are being collocated near power generating plants to take advantage of existing cooling water systems. By using a small percentage of the power plants cooling water discharge, higher desalination plant inlet temperatures are realized and dilution of brine discharge is achieved by injection into the power plants high volume return

flow. Use of an existing seawater withdrawal and discharge structure saves on construction and permit costs. The higher inlet temperatures for desalination processing save on energy costs. Unfortunately, such power plants or large sea water cooling structures do not exist in or near Kitsap County and sea water temperatures in the Puget Sound region are much lower than areas where desalination plants are currently being built. These factors, plus availability of much less costly water supply alternatives, make desalination less attractive in this region compared to areas such as Florida and Southern California.

Based upon a review of professional journal articles related to desalination, combined operational and amortized capital costs for brackish water treatment plants producing between 1.06 and 10.6 million gallons per day range from $2.85 to $11.35 per million gallons (MG) of water produced. Seawater desalination plants were reported to cost $11,367 to $2,839 per MG of potable water produced.

Based upon cost figures for a desalination plant in Sand City, California, capital costs for a desalination facility in the Pacific Northwest are estimated to be approximately $10,000,000 per mgd. Annual O&M costs are estimated to be on the order of $500,000 per mgd. The significantly higher O&M costs are related primarily to power requirements.

Appendix K Water Resource Data Management Program

Background

In 1987, Kitsap County secured funding from Washington State Department of Ecology for Ground Water Management Planning. In accordance with WAC 173-100-050, a Ground Water Advisory Committee, made up of local governments, tribal governments, water purveyors and others, was formed to direct this effort. In 1989, Volume I of the Kitsap County Ground Water Management Plan (GWMP) was published. The GWMP recommended a "comprehensive hydrogeologic and water quality monitoring network" be established to gather data on Kitsap County's water resources. Under an interlocal agreement with Kitsap County, Kitsap Public Utility District (KPUD) was designated lead agency for establishing this network and began collecting hydrologic data on Kitsap County in 1990. In January 1995, KPUD signed a Memorandum of Agreement with Washington State Department of Ecology to "undertake a comprehensive watershed assessment of the surface and groundwater resources of Kitsap County". Data collected pursuant to the GWMP was analyzed and, in 1997, results were published as the Kitsap County Initial Basin Assessment (Washington State Department of Ecology Document 97-4).

Area Description

Kitsap County encompasses approximately 400 square miles, and occupies a peninsula and several islands in Puget Sound. It is bounded on the east and north by Puget Sound and Admiralty Inlet, and on the west by Hood Canal. The county is adjoined by Pierce and Mason Counties on the south, Jefferson County on the west, and King County on the east.

The physiography and topographic characteristics of the county are similar to much of the surrounding Puget Sound area, consisting of remnants of a glacial drift plain. The surface is composed of generally flat-topped rolling hills and ridges which rise to approximately 400 to 600 feet above Mean Sea Level (MSL), and are separated by long valleys and marine embayments. The Green and Gold Mountains are a prominent group of rugged volcanic rock hills in the west-central portion of the county that rise to an elevation of approximately 1,700 feet above MSL. Much of the upland areas terminate along the coast in steep bluffs. Since the close of the last glaciation (Vashon Glaciation), the landscape has been slightly modified by stream erosion, landslides, and wave action. Upland areas occupy approximately 75 percent of the county, flat valley floors occupy about 5 percent of the county, and transitional valley slopes, sea cliffs, and the Green and Gold Mountain area occupy the remaining 20 percent.

The uplands are predominately recharge areas in which water percolates downward to water bearing strata and eventually migrates to discharge areas. Numerous surface water drainage features, such as Gorst and Big Beef Creeks, provide internal drainage for the

shallow ground water systems that occur within the uplands. The larger drainage features within or adjoining the county such as Liberty Bay, Sinclair and Dyes Inlets, Hood Canal, and Puget Sound, are regional discharge areas for the deep ground water that originates within the uplands.

Kitsap County has a marine climate typified by short, cool summers, and prolonged, mild, wet winters. Winter storms generally approach the county from the southwest. The southwestern portion of the county receives relatively high winter rainfall from storms that enter the area through a topographic gap between the Olympic Mountains and the Black Hills. The northern portion of the Kitsap Peninsula experiences drier winter weather because it is situated in the rain shadow of the Olympic Mountains (Kitsap County Initial Basin Assessment, 1997)

Precipitation

Precipitation varies over the county from just under 30 inches per year in the north to over 80 inches per year in the southwest. On a seasonal basis, 79 percent of the precipitation at the Bremerton Fire Station occurs in the six-month period from October through March. Additionally, total rainfall for the driest months of June, July, and August is seven percent of the annual total, at a time when water use is greatest.

Precipitation provides the input that supplies stream runoff and ground water recharge. Variation in precipitation must be taken into account when assessing trends in streamflow and ground water levels (Kitsap County Initial Basin Assessment, 1997). Section 1 of Volume I presents precipitation data from 38 stations located throughout Kitsap County.

Ground Water Level

Water level monitoring provides a basis for evaluating impacts on the ground water system that may be associated with ground water development, land use changes, and precipitation patterns. Water levels are affected primarily by climatic trends and amount of ground water withdrawal. Climatic trends include changes in precipitation and drought periods; ground water withdrawal includes water pumped from public and private wells. Data collected over the past few decades indicates that aquifer water levels primarily track rainfall over the long run. The early 1990s were dry years that caused aquifer levels to trend downward during that period. The late 1990s were exceptionally wet and aquifer levels trended up, reaching some of the highest aquifer levels on record in some areas. The most recent years have been dry and again aquifer levels have generally trended downward. Depending on the depth of the aquifer, water levels response to rainfall may be delayed many months. Ground water level trend data is required to understand seasonal variations in aquifer levels, the effects of pumping on aquifer levels, identify areas where possible overdraft (mining) of an aquifer is occurring, and to assess seawater intrusion or stream depletion.

Stream Flow

The GWMP concluded, "stream flow monitoring is needed throughout the county to establish baseline trends and possible impacts related to ground water development". Maintenance of stream flows necessary to preserve instream resources is a major concern. In 1990, there was only one active stream gaging station operating in Kitsap County. Stream flow records are also useful in assessing the effects of urbanization on basin hydrology. Approximately 35 gaging stations have been established since 1990.

CWSP Resource Monitoring Program

Comprehensive water quality monitoring is accomplished under the Federal Safe Drinking Water Act (SDWA) and Clean Water Act (CWA) programs conducted in conjunction with the Washington State Departments of Ecology and Health. The components listed below make up the monitoring program, beyond SDWA and CWA requirements, that supports CWSP activities and other water resource management activities:

Precipitation Monitoring:

Quantification of precipitation is an important component of the watershed assessment process. Precipitation provides the input that supplies stream runoff and ground water recharge. Volume I of the Kitsap County Ground Water Management Plan (1989) found "very little precipitation data being collected within the county" and recommended "ongoing precipitation monitoring throughout the county to establish a database from which to better assess the spatial and temporal variations of precipitation and other water balance components". KPUD's precipitation monitoring network was founded based on the above recommendation. Effort was made to compile historic records and contact organizations that were recording rainfall quantities. Additional stations were then established in areas where data was lacking.

The Data Base currently contains records for 34 active and 4 inactive stations. Several of the stations are automated and record at 15-minute intervals. The majority of the stations record daily totals and utilize 4-inch diameter plastic rain gauges. Tables have been developed that show daily precipitation totals by water year and they list all the data reported to KPUD for each station. The data through 1999 has been published in a publication by KPUD titled *Precipitation, Water Level, & Stream Flow Data for Kitsap County, Volume 1, February 2000*, which includes tables and maps of the precipitation monitoring points.

A map of spatial distribution of precipitation was compiled for the Kitsap County Initial Basin Assessment (1997). The map shows lines of equal precipitation, called isohyetals. The map was based on data from the KPUD network, but also included data from NOAA precipitation stations from outside Kitsap County. KPUD and NOAA data was combined and normalized to produce the map, which is intended to show long-term, averaged precipitation patterns. Only some of the

38 stations mentioned above were used to produce the 1997 map, and therefore they are not all shown in the 1997 map. Average precipitation varies over the county from just under 30 inches per year in the north to over 80 inches per year in the south, and southwest. The accuracy of the map is believed to be relatively high in most areas, with the exception of the Green and Gold Mountains where orographic effects are significant and precipitation is believed to be higher. A station has recently been established in this area and should eliminate this data gap in the future. The map may be view on the KPUD website at: http://kpud.org/reference/documents/initialbasin/ex3-1.pdf.

In addition to precipitation that is collected by KPUD, many private and public agencies have begun collecting precipitation data or have done recent reviews. For example, James Lumber in Poulsbo, and the Port of Silverdale have web-assessable weather stations that include precipitation. The Phase 2 Level 1 Assessment completed for 2514 Basin Planning (Golder 2002) includes a review of precipitation for WRIA 15 based on PRISM modeling, and can be viewed at:

http://kitsappeninsulawatershed.org/pdf/Level_1_Assessment/Figure_4-1.pdf and http://kitsappeninsulawatershed.org/pdf/Level_1_Assessment/Figure_4-2.pdf.

Water purveyors and others that have rainfall-monitoring stations and are keeping precipitation records are encouraged to provide input to the database to improve the coverage.

Aquifer Water Level Monitoring:

Water level monitoring provides a basis for evaluating impacts on the ground water system that may be associated with ground water development, land use changes, and precipitation patterns. Ground water trends from natural processes or ground water withdrawals frequently cross water system boundaries. Coordinated monitoring and exchange of information is important to a CWSP process to anticipate problems with aquifers such at mining and seawater intrusion. Most purveyors collect water level and production data at various frequencies to meet conditions of their water rights and monitor operation and maintenance of their systems. Much of the data has not been transferred to a central location for analysis for the benefit of all CWSP members. All water purveyors are encouraged to voluntarily participate and make their data available to the Countywide Data Base for recording and review under the CWSP monitoring program. (KPUD will assist other purveyors with their monitoring efforts upon request.)

An example of aquifer level monitoring is included in a publication by KPUD titled *Precipitation, Water Level, & Stream Flow Data for Kitsap County, Volume 1, February 2000. T*hat document included water-level hydrographs for 153 wells around the county. Water purveyors including Silverdale Water District, Bremerton Utilities, and KPUD, collected most of the presented data. Production data was included with the hydrographs when provided. Most water levels are measured manually using various methods such as calibrated electric tape. An increasing

number of wells are equipped with data loggers that collect frequent, high-resolution data. The network includes wells that are completed over a wide range of depths for the propose of assessing trends in shallow, sea level, and deep ground water flow systems. Tables, maps, and figures of some of the wells included in the 2000 summary have been dropped from monitoring but others have taken their place as water purveyors in the county began or expanded their monitoring efforts.

The CWSP process should include a comprehensive water level monitoring and analysis program that is integrated with streamflow, precipitation, and saltwater intrusion monitoring. Minimum water-level-data collection, QA/QC and reporting for Group A systems with over 50 connections should include:

- Monthly non-pumping (i.e. static) water level, and pumping water level for each source well. If multiple wells are located at the same location and are completed in the same aquifer, only one well need be sounded for non-pumping water level (pumping water levels do not aid in aquifer trend analysis but should still be collected on a monthly basis to assess well capacity or pump problems);
- Measurements made with a calibrated sound device to an accuracy of 0.01 feet;
- Result tabulated in a spreadsheet format with individual columns for date of reading, time of reading, water level measurement below measuring point, measurement codes (i.e., status, method, and accuracy of measurement) and comments (e.g., well off 2 hours). See following example.

Microsoft Excel - Book2.xls

File Edit View Insert Format Tools Data Window Help

Example Spreadsheet for Water Level Data

System Name	Jones Water System
DOH WFI #	W12345
Common Well Name:	Well 3
SO number	SO5
Unique Well ID #	AHK123
Ecology Water Right #'s	G1-25747P
Local Number:	SW1/4 SE 1/4 Sec 19 T26N/R02E (I/4 1/4 Section Township Range)
Latitude/Longitude	474333 1223524, NAD 83 degrees minutes seconds
Kitsap AAN	27260130232001 Kitsap Assessor Account Number/Parcel ID number
Site Elevation Reference	230 feet MSL, well house floor
Measuring Point (MP)	Top of casing at 1.05 feet above well house floor

Date	Time	Water level			Measurement Codes			Decimal	Remark
		below MP	below gnd	elevation	Status	Method	Accuracy	date	
8/25/1988		191.5	190.45	39.55			1	32380.00	Water level at construction
11/14/1990	930	223.70	222.65	7.35	P	V	2	33191.00	Pumping
1/11/1991	800	194.15	193.10	36.90		V	2	33249.00	
1/30/1991	745	193.74	192.69	37.31		V	2	33268.00	
2/27/1991	1155	193.00	191.95	38.05		V	2	33296.00	
3/27/1991	800	193.90	192.85	37.15		V	2	33324.00	
4/22/1991	800	193.55	192.50	37.50		V	2	33350.00	
6/4/1991	815	193.45	192.40	37.60		V	2	33393.00	
6/26/1991	915	194.00	192.95	37.05		V	2	33415.00	
7/30/1991	1040	195.21	194.16	35.84		V	2	33449.00	
9/9/1991	1325	195.46	194.41	35.59		V	2	33490.00	
11/4/1991	945	195.78	194.73	35.27		V	2	33546.00	
11/5/1991	1150	195.95	194.90	35.10		V	2	33547.00	
11/6/1991	1200	205.36	204.31	25.69	R				Recovering

Sheet2 Sheet1 Sheet3

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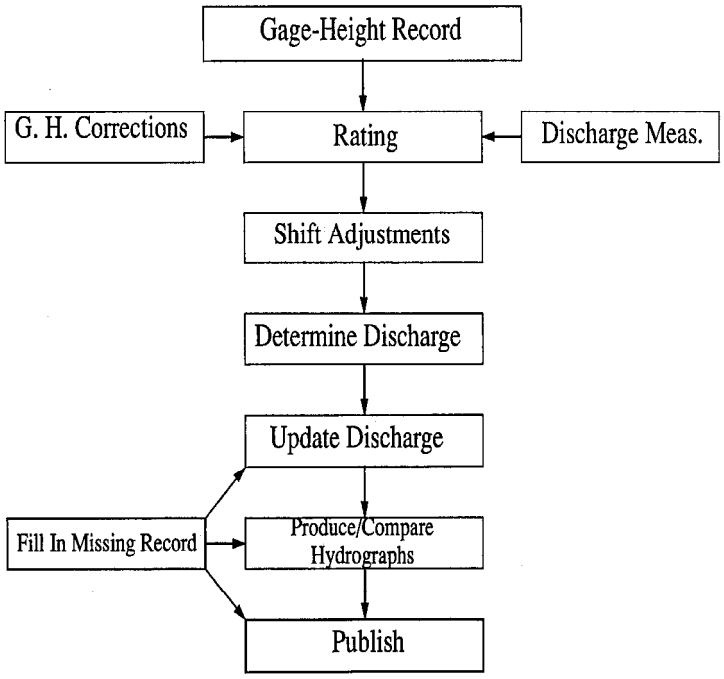
Stream Flow Measurements:

KPUD published *Precipitation, Water Level, & Stream Flow Data for Kitsap County, Volume 1, February 2000*, which includes tables and graphics for 19 stream gage sites throughout the county. The number of gages will increase or decrease in the future based on basin requirements and characteristics, special requests, and funding. Individual stations were located to account for as much of the streams' drainage as possible while avoiding tidal interference. Thirteen of these stations are equipped with continuous recording data loggers that report stage at 15-minute intervals. This produces 96 records per day. The mean daily discharge (arithmetic mean in cubic feet per second) is calculated for each set of values taken from midnight to midnight each day. Mean daily discharge is presented in graph and tabular form.

Field Methodology. The PUD follows USGS streamflow data collection methods as described in Water–Supply Paper 2175. The steps required to produce a computation of discharge record are as follows:



Seawater Intrusion (chloride) Monitoring:

Seawater intrusion is a potential future threat to Kitsap County ground water. Chloride, the predominant cation in seawater, it is easy and inexpensive to analyze for, and is the most commonly used constituent to monitor for and assess

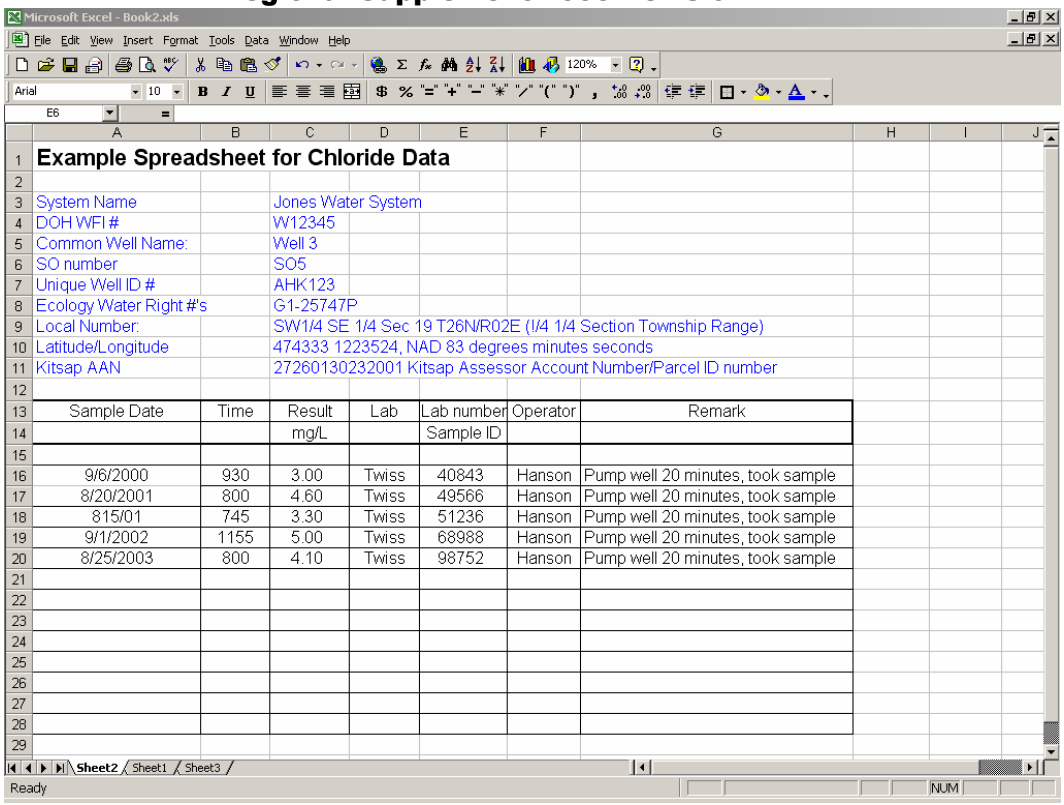
seawater intrusion. The CWSP monitoring program should include a countywide, integrated network of monitoring points for seawater intrusion.

KPUD maintains a limited Chloride Monitoring Network. The network currently consists of 53 wells that are primarily owned and operated by KPUD. Samples are collected semiannually during the wet and dry periods of the year. The network does not cover some of the major groundwater withdrawal centers within Kitsap County where intrusion may be a significant threat. A white paper by KPUD (Sebren August 2002) provides a brief discussion of the KPUD network and graphics of chloride concentration over time for selected wells.

Review of historical chloride data was one of the work products accomplished for 2514 Basin Planning for WRIA 15 (Golder Associates Inc. 2003 Kitsap Watershed Planning (WRIA 15) Water Quality Technical Assessment Final Report). The focus of this report was an evaluation of aquifer susceptibility and saltwater intrusion as indicated by the distribution of nitrate and chloride. The primary data set used for the assessment was water quality compliance monitoring data for Group A and B public water systems that is routinely submitted to and compiled by WDOH. The study area covers all of WRIA 15 including all of Kitsap County and the Gig Harbor and Key Peninsulas. Distribution of chloride and nitrate are graphically depicted, filtered by aquifer depth, and general "hot spots" of high concentrations are shown and discussed. Chloride generally is higher in wells within ½ mile of the marine coast, but elevated chloride at actionable limits were not evident throughout the WRIA. Some spots with historical evidence of elevated chloride included President's Point south of Kingston, the south Gig Harbor Peninsula, and islands south of the Gig Harbor peninsula.

A cooperative program to monitor for saltwater intrusion should have a good geographical distribution of observation wells in the Sealevel and deeper aquifers within ½ mile of saltwater, with emphasis on those areas of high groundwater withdrawal. It should also include an agreed to division of labor detailing frequency of sampling, QA/QC of data collection, database format, how the program should be funded and who should be the lead. At a minimum, data collection for chloride, QA/QC and reporting should include:

- An annual sample of untreated water (raw water before chlorination) for each source well in the Sea level or deeper aquifer,
- Sample analyzed by a certified lab with a reporting limit of 1 mg/l,
- Tabulated results in a spreadsheet format with individual columns for date of reading, time of reading, analysis result, name of certified lab, sample ID number, operator and pertinent comment/remark (see following example). Additional columns could be added to suit the individual needs of the water system.



Example Spreadsheet for Chloride Data

System Name	Jones Water System
DOH WFI #	W12345
Common Well Name:	Well 3
SO number	SO5
Unique Well ID #	AHK123
Ecology Water Right #'s	G1-25747P
Local Number:	SW1/4 SE 1/4 Sec 19 T26N/R02E (I/4 1/4 Section Township Range)
Latitude/Longitude	474333 1223524, NAD 83 degrees minutes seconds
Kitsap AAN	27260130232001 Kitsap Assessor Account Number/Parcel ID number

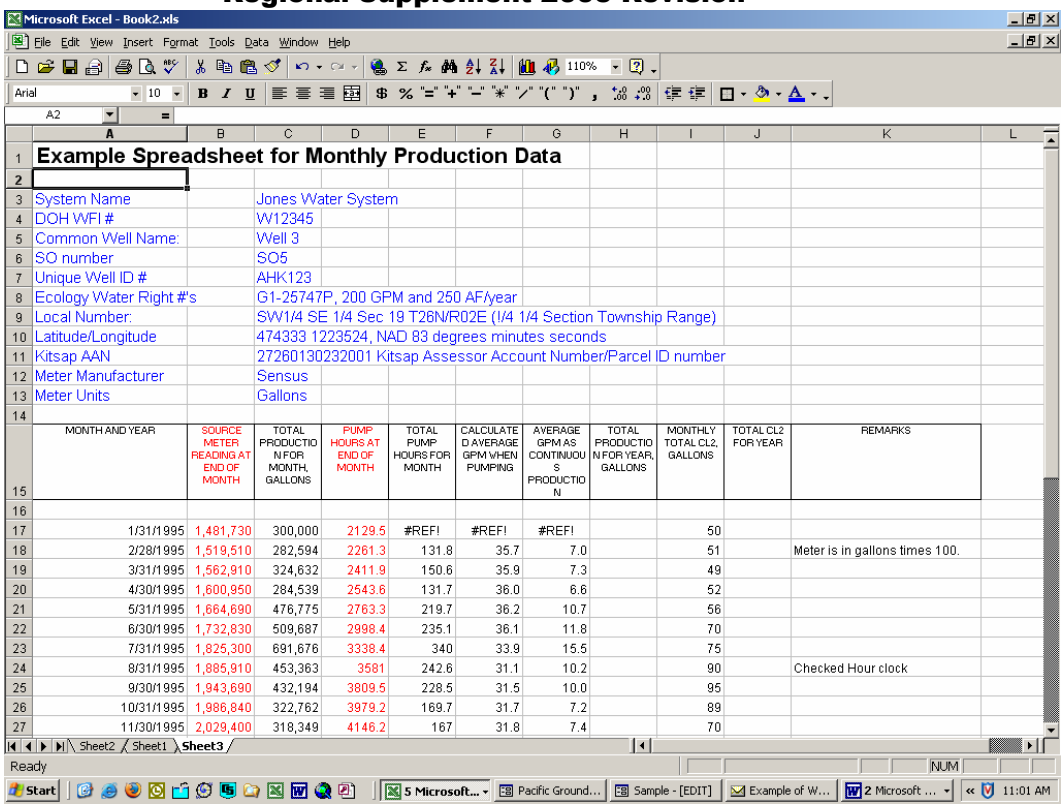
Sample Date	Time	Result	Lab	Lab number	Operator	Remark
		mg/L		Sample ID		
9/6/2000	930	3.00	Twiss	40843	Hanson	Pump well 20 minutes, took sample
8/20/2001	800	4.60	Twiss	49566	Hanson	Pump well 20 minutes, took sample
815/01	745	3.30	Twiss	51236	Hanson	Pump well 20 minutes, took sample
9/1/2002	1155	5.00	Twiss	68988	Hanson	Pump well 20 minutes, took sample
8/25/2003	800	4.10	Twiss	98752	Hanson	Pump well 20 minutes, took sample

Water Production Measurements:

All water systems are required to measure and record water production data as a condition of their water rights, and submit the data to Ecology when requested. The same data is necessary for efficient CWSP review and/or update but acquiring production records has been difficult. . KPUD will maintain a database of water production by source and purveyor for Group A systems that provide their data. Group A purveyors are encouraged to provide production data, non-revenue water such as that used for flushing and fire department training that can be estimated, quantity of water delivered to customers, and per ERU usage data, for analysis to support WATERPAK conservation efforts.

Water production data should be collected and complied with the following minimums:

- Monthly total production for each source well on the system, including every well in a well field,
- Meters should be calibrated as needed to meet industry standards,
- Tabulate monthly totals in a spreadsheet format with individual columns for date and time, meter reading, and include pertinent comments (e.g., meter turned over, meter calibrated, changed hour meter),
- Other columns can be added for calculations to suit the individual needs of the water system.



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	A	B	C	D	E	F	G	H	I	J	K	L
1	Example Spreadsheet for Monthly Production Data											
2												
3	System Name		Jones Water System									
4	DOH WFI #		W12345									
5	Common Well Name:		Well 3									
6	SO number		SO5									
7	Unique Well ID #		AHK123									
8	Ecology Water Right #'s		G1-25747P, 200 GPM and 250 AF/year									
9	Local Number:		SW1/4 SE 1/4 Sec 19 T26N/R02E (I/4 1/4 Section Township Range)									
10	Latitude/Longitude		474333 1223524, NAD 83 degrees minutes seconds									
11	Kitsap AAN		27260130232001 Kitsap Assessor Account Number/Parcel ID number									
12	Meter Manufacturer		Sensus									
13	Meter Units		Gallons									
14												
15	MONTH AND YEAR	SOURCE METER READING AT END OF MONTH	TOTAL PRODUCTION FOR MONTH, GALLONS	PUMP HOURS AT END OF MONTH	TOTAL PUMP HOURS FOR MONTH	CALCULATED AVERAGE GPM WHEN PUMPING	AVERAGE GPM AS CONTINUOUS PRODUCTION	TOTAL PRODUCTION FOR YEAR, GALLONS	MONTHLY TOTAL CL2, GALLONS	TOTAL CL2 FOR YEAR	REMARKS	
16												
17	1/31/1995	1,481,730	300,000	2129.5	#REF!	#REF!	#REF!		50			
18	2/28/1995	1,519,510	282,594	2261.3	131.8	35.7	7.0		51		Meter is in gallons times 100.	
19	3/31/1995	1,562,910	324,632	2411.9	150.6	35.9	7.3		49			
20	4/30/1995	1,600,950	284,539	2543.6	131.7	36.0	6.6		52			
21	5/31/1995	1,664,690	476,775	2763.3	219.7	36.2	10.7		56			
22	6/30/1995	1,732,830	509,687	2998.4	235.1	36.1	11.8		70			
23	7/31/1995	1,825,300	691,676	3338.4	340	33.9	15.5		75			
24	8/31/1995	1,885,910	453,363	3581	242.6	31.1	10.2		90		Checked Hour clock	
25	9/30/1995	1,943,690	432,194	3809.5	228.5	31.5	10.0		95			
26	10/31/1995	1,986,840	322,762	3979.2	169.7	31.7	7.2		89			
27	11/30/1995	2,029,400	318,349	4146.2	167	31.8	7.4		70			

Sheet2 Sheet1 Sheet3

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Supporting Activities:

KPUD maintains a database and documents on local hydrogeology and water quality. KPUD catalogs the Department of Ecology Water Well Reports (well logs) for the wells in Kitsap County and upgrades the data contained in those records. From the well logs, KPUD compiles a database (Microsoft Access format) that includes location, elevation, and physical characteristics of the well, water quality and other data. All data in the KPUD database is available upon request. Certain portions of the data are available on the KPUD web site at kpud.org.

Appendix

L Instream Resource Protection Program

Chapter 173-515 WAC
INSTREAM RESOURCES PROTECTION PROGRAM -- KITSAP WATER RESOURCE INVENTORY AREA (WRIA) 15

WAC

WAC 173-515-010 General provision. These rules apply to waters within the Kitsap water resource inventory area (WRIA) 15 as defined in WAC 173-500-040. This chapter is promulgated pursuant to chapter 90.54 RCW (Water Resources Act of 1971), chapter 90.22 RCW (minimum water flows and levels), and in accordance with chapter 173-500 WAC (water resources management program). [Statutory Authority: Chapters 90.22 and 90.54 RCW. 81-16-003 (Order DE 80-45), § 173-515-010, filed 7/24/81.]

WAC 173-515-020 Purpose. The purpose of this chapter is to retain perennial rivers, streams, and lakes in the Kitsap water resource inventory area (WRIA) 15 with instream flows and levels necessary to provide for preservation and protection of wildlife, fish, scenic, aesthetic and other environmental values, recreational and navigational values, and to preserve water quality.

[Statutory Authority: Chapters 90.22 and 90.54 RCW. 81-16-003 (Order DE 80-45), § 173-515-020, filed 7/24/81.]

WAC 173-515-030 Establishment of instream flows. (1) The following instream flows are established for each stream listed, from the point of influence of mean high tide at low flow to the stream's headwaters including tributaries except where indicated otherwise. Monitoring will take place at the control locations indicated.

INSTREAM FLOWS IN THE KITSAP WATER RESOURCE INVENTORY AREA (WRIA) 15

Stream Number**	#7	#44	#60
Stream Name	Union River	Tahuya River	Rendsland Cr.
Gage Number	12-0635.00	12-0680.00	
River Mile	2	2.5	near mouth
Sec., Twp., Rge.	20,23N.,1W.	12,22N.,3W.	19,22N.,3W.
Month Day	cfs	cfs	cfs
Jan. 1	65*	90	18
15	65*	90	18
Feb. 1	65*	90	18
15	65*	90	18
Mar. 1	59*	90	18
15	53*	90	18
Apr. 1	48*	72	18
15	44*	58	16
May 1	40*	47	13.5
15	36*	38	12
June 1	33*	31	10*
15	29*	25*	9*
July 1	27*	18*	8*
15	24*	12*	7*
Aug. 1	22*	8.5*	6*
15	20*	5.5*	5*
Sept. 1	20*	5.5*	5*
15	20*	5.5*	5*
Oct. 1	20*	7*	5*
15	20*	13*	7*
Nov. 1	27*	25	9.5
15	35*	48	13
Dec. 1	47*	90	18
15	65*	90	18

*WAC 173-515-040(2) closes certain streams to additional consumptive appropriations during specific time periods. These closures are indicated by asterisks in the following table. Such closures supersede the indicated instream flow. The Union River closure extends upstream to McKenna Falls (RM 6.7).

**Stream numbers correlate with Plate I, instream resources protection program, Kitsap water resource inventory area (WRIA) 15.

Stream Number**		#70	#96	#113
Stream Name		Dewatto River	Anderson Cr.	Stavis Cr.
Gage Number		12-0685.00		12-0695.00
River Mile		1.5	0.1	0.75
Sec., Twp., Rge.		23,23N.,3W.	17,24N.,2W.	25,25N.,2W.
Month	Day	cfs	cfs	cfs
Jan.	1	75	10.5	15
	15	75	10.5	15
Feb.	1	75	10.5	15
	15	75	10.5	15
Mar.	1	75	10.5	15
	15	75	10.5	15
Apr.	1	60	10.5	14
	15	49	10	13
May	1	39	9	12
	15	32	8.5	11
June	1	25	8	10
	15	22*	7.5	9.5
July	1	20*	7	9
	15	17.5*	6.5	8
Aug.	1	15.5*	6	7.5
	15	13.5*	6	7
Sept.	1	13.5*	6	7
	15	13.5*	6	7
Oct.	1	13.5*	6.5	7
	15	17*	7	8.5
Nov.	1	21	8	10.5
	15	39	8.5	12.5
Dec.	1	75	9.5	15
	15	75	10.5	15

Stream Number**		#121	#124	#192
Stream Name		Big Beef Cr.	Anderson Cr.	Grover's Cr.
Gage Number		12-0695.50		
River Mile		0.25	near mouth	near mouth
Sec., Twp., Rge.		22,25N.,1W.	13,25N.,1W.	4,26N.,2E.
Month	Day	cfs	cfs	cfs
Jan.	1	40	8	5.5
	15	40	8	5.5
Feb.	1	40	8	5.5
	15	40	8	5.5
Mar.	1	40	8	5.5
	15	40	8	5.5
Apr.	1	31	8	5.5
	15	24	6	4.5
May	1	18	4.5	4
	15	14*	3.5	3.5
June	1	11*	3*	3*
	15	8.5*	2*	2.5*
July	1	6.5*	1.5*	2.5*
	15	5*	1.5*	2*
Aug.	1	4*	1*	2*
	15	4*	1*	2*
Sept.	1	4*	1*	2*
	15	4.5*	1*	2.5*
Oct.	1	5.5*	1.5*	3*
	15	6*	1.5*	3.5*
Nov.	1	7*	2.5*	4
	15	12	4.5	4.5
Dec.	1	22	8	5.5
	15	40	8	5.5

Stream Number**		#223	#248	#259
Stream Name		Steel Creek	Strawberry/ Kochs/Cooks	Dickerson Cr.
Gage Number				
River Mile		near mouth	near mouth	Confluence with Chico Cr.
Sec., Twp., Rge.		14,25N.,1E.	20,25N.,1E.	8,24N.,1E.
Month	Day	cfs	cfs	cfs
Jan.	1	6	7	3*
	15	6	7	3*
Feb.	1	6	7	3*
	15	6	7	3*
Mar.	1	6	7	3*
	15	6	7	3*
Apr.	1	6	7	2.5*
	15	5	5.5	2.5*
May	1	4.5	4.5	2*
	15	4	3.5	2*
June	1	3.5*	2.5*	1.5*
	15	3*	2*	1.5*
July	1	3*	1.5*	1.5*
	15	2.5*	1.5*	1.5*
Aug.	1	2.5*	1*	1*
	15	2.5*	1*	1*
Sept.	1	2.5*	1*	1*
	15	3*	1*	1*
Oct.	1	3.5*	1*	1*
	15	4*	1.5*	1.5*
Nov.	1	4.5	2.5	1.5*
	15	5	4	1.5*
Dec.	1	6	7	3*
	15	6	7	3*

Surface Water Closures

Stream Number**	#259	#268	#294
Stream Name	Chico Cr.	Gorst Cr.	Curley Cr.
Gage Number			
River Mile	near mouth	0.1	0.1
Sec., Twp., Rge.	5,24N.,1E.	32,24N.,1E.	4,23N.,2E.
Month	Day	cfs	cfs	cfs
Jan.	1	15*	25	40
	15	15*	25	40
Feb.	1	15*	25	40
	15	15*	25	40
Mar.	1	15*	25	40
	15	15*	21	40
Apr.	1	15*	18	31
	15	13.5*	15	25
May	1	12*	13	20
	15	11*	11	16
June	1	10*	10.5	12.5
	15	9*	10	10*
July	1	8.5*	9	8*
	15	8*	8.5	6.5*
Aug.	1	7.5*	8	5*
	15	7*	7.5	5*
Sept.	1	7*	7.5	5*
	15	7*	7.5	5*
Oct.	1	7*	8	5*
	15	8*	8.5	8*
Nov.	1	9*	9	14
	15	11.5*	15	23
Dec.	1	15*	25	40
	15	15*	25	40

Stream Number**	#313	#321	#354
Stream Name	Ollala Cr.	Crescent Cr.	Purdy Cr.
Gage Number			12-0728.00
River Mile	near mouth	near mouth	0.1
Sec., Twp., Rge.	4,22N.,2E	32,22N.,2E.	24,22N.,1E.
Month	Day	cfs	cfs	cfs
Jan.	1	13	9	7
	15	13	9	7
Feb.	1	13	9	7
	15	13	9	7
Mar.	1	13	9	7
	15	13	9	6
Apr.				

WAC 173-515-040 Surface water closures. (1) The department, having determined there are no waters available for further appropriation, closes the following streams to further consumptive appropriation. These closures confirm surface water source limitations previously established administratively under authority of chapter 90.03 RCW and RCW 75.20.050.

**Stream numbers correlate with Plate I, instream resources protection program, Kitsap water resource inventory area (WRIA) 15.

Stream Number** Stream or Lake Name Sec., Twp., Rge. at Mouth	Tributary to	Date of Original Closure
Stansberry Lake and tributaries Sec. 19, T.22N., R.1E.	Carr Inlet	5-17-66
Mission Lake and tributaries Outlet: NE1/4NW1/4 Sec. 32, T.24N.,R.1W.	Mission Creek	7-19-78
#12 Mission Creek and tributaries NW1/4NE1/4 Sec. 1, T.22N., R.2W.	Hood Canal	12-5-51
#57 Unnamed Stream and tributaries Sec. 20, T.21N., R.4W.	Hood Canal	11-3-48
#117 Seabeck Creek and tributaries SE1/4SW1/4 Sec. 20, T.25N., R.1W.	Seabeck Bay	8-27-54
#158 Unnamed Stream (Gamble Creek, Christianson Creek) and tributaries SW1/4SW1/4 Sec. 20, T.27N., R.2E.	Port Gamble	8-15-75
#207 Unnamed Stream (Dogfish Creek, Harding Creek) and tributaries NE1/4NE1/4 Sec. 15, T.26N., R.1E.	Liberty Bay	8-21-75
#245 Barker Creek and tributaries SW1/4SW1/4 Sec. 22, T.25N., R.1E.	Dyes Inlet	2-21-61
#246 Clear Creek and tributaries SE1/4SW1/4 Sec. 16, T.25N., R.1E.	Dyes Inlet	7-27-53
#259 Chico Creek and tributaries above confluence of Dickerson Creek, (excluding Wildcat Lake). Sec. 5, T.24N., R.1E.	Chico Bay	11-3-52
#259 Kitsap Creek and tributaries Sec. 5, T.24N., R.1E.	Chico Creek	7-2-42
#259 Unnamed Stream and tributaries SE1/4SW1/4 Sec. 17, T.24N., R.1E.	Kitsap Lake	12-8-52

#279 Blackjack Creek and tributaries NE1/4SE1/4 Sec. 25, T.24N., R.1E.	Sinclair Inlet	4-5-60
#285 Unnamed Stream (Sullivan Creek) and tributaries NE1/4SW1/4 Sec.19, T.24N., R.2E	Sinclair Inlet	5-9-75
#294 Salmonberry Creek and tributaries NW1/4SE1/4 Sec. 18, T.23N., R.2E.	Long Lake	1-7-48
#356 Burley Creek and tributaries, SW1/4NW1/4 Sec. 12, T.22N., R.1E.	Burley Lagoon	5-10-51
#367 Minter Creek and tributaries SW1/4NE1/4 Sec. 29, T.22N., R.1E.	Henderson Bay	12-28-73
#402 Unnamed Stream (Dutcher Creek) and tributaries NE1/4NE1/4 Sec. 15, T.21N., R.1W.	Dutcher Cove	3-10-54
#510 Judd Creek and tributaries NE1/4NE1/4 Sec. 18, T.22N., R.3E.	Quartermaster Harbor	5-10-51

(2) The department has determined that (a) certain streams exhibit low summer flows and have a potential for drying up or inhibiting anadromous fish passage during critical life stages, and (b) historic flow regimes and current uses of certain other streams indicate that no water is available for additional appropriation. Based upon these determinations and in accordance with the general intent of RCW 75.20.050, the following streams are closed to further appropriation for the periods indicated:

New Surface Water Closures

**Stream numbers correlate with Plate I, instream resources protection program, Kitsap water resource inventory area (WRIA) 15.

Stream Number** Stream Name Sec., Twp., Rge. at Mouth	Tributary to	Period of Closure
#7 Union River and tributaries from the mouth to McKenna Falls (R.M. 6.7) SE1/4SW1/4 Sec. 29, T.23N., R.1W.	Hood Canal	All year
#44 Tahuya River and tributaries SE1/4SE1/4 Sec. 22, T.22N., R.3W.	Hood Canal	June 15-Oct. 15
#60 Rendsland Creek and tributaries NW1/4NW1/4 Sec. 19, T.22N., R.3W.	Hood Canal	June 1-Oct. 31
#70 Dewatto River and tributaries NW1/4SE1/4 Sec. 27, T.22N., R.3W.	Hood Canal	June 15-Oct. 31
#121 Big Beef Creek and tributaries SW1/4SE1/4 Sec. 15, T.25N., R.1W.	Hood Canal	May 15-Oct. 31
#124 Anderson Creek and tributaries NW1/4NW1/4 Sec. 13, T.26N., R.1W.	Hood Canal	June 1-Oct. 31
#192 Grover's Creek and tributaries NW1/4SW1/4 Sec. 4, T.26N., R.2E.	Puget Sound	June 1-Oct. 15
#223 Unnamed Stream (Steel Creek) and tributaries SE1/4SE1/4 Sec. 14, T.25N., R.1E.	Port Orchard	June 1-Oct. 15
#248 Unnamed Stream and tributaries (Strawberry/Cook's/Koch's Creek) SE1/4NE1/4 Sec. 20, T.25N., R.1E.	Dyes Inlet	June 1-Oct. 31
#259 Dickerson Creek and tributaries SW1/4NW1/4 Sec. 7, T.24N., R.1E.	Chico Creek	All year
#259 Chico Creek and tributaries below confluence of Dickerson Creek SW1/4SW1/4 Sec. 5, T.25N., R.1E.	Chico Bay	All year
#294 Curley Creek and tributaries NE1/4NE1/4 Sec. 18, T.23N., R.2E.	Yukon Harbor	June 15-Oct. 15
#313 Olalla Creek and tributaries SE1/4NE1/4 Sec. 4, T.22N., R.2E.	Colvos Passage	June 1-Oct. 15
#321 Crescent Creek and tributaries SE1/4SW1/4 Sec. 32, T. 22N., R.2E.	Gig Harbor	June 1-Oct. 15
#354 Purdy Creek and tributaries NE1/4NW1/4 Sec. 12, T.22N., R.1E.	Henderson Bay	June 1-Oct. 31
#369 Lackey Creek and tributaries SE1/4SW1/4 Sec. 31, T.21N., R.1E.	Carr Inlet	June 1-Nov. 15
#415 Rocky Creek and tributaries SE1/4SE1/4 Sec. 27, T.22N., R.1E.	Case Inlet	June 1-Oct. 31

(3) In the Kitsap basin numerous small streams with estimated mean annual flow of 5 cfs or less have been identified as having high instream values for anadromous fish, aesthetics, water quality, and/or recreation. In accordance with the general intent of RCW 75.20.050 the department has determined that the total natural flow of these streams is required for protection and preservation of instream resources, and that no water is available for additional consumptive appropriation. The natural flow, in effect, constitutes the minimum flow for protection of the instream resources. The following streams possess such characteristics and are therefore closed year-round to further consumptive appropriation.

New Surface Water Closures

**Stream numbers correlate with Plate I, instream resources protection program, Kitsap water resource inventory area (WRIA) 15.

Stream Number** Stream Name Sec., Twp., Rge. at Mouth	Tributary to
#13 Little Mission Creek and tributaries SE1/4NW1/4 Sec. 1, T.22N., R.2W.	Hood Canal
#18 Stimson Creek and tributaries NW1/4NW1/4 Sec. 11, T.22N., R.2W.	Hood Canal
#31 Unnamed Stream (Little Shoefly Creek) and tributaries SW1/4NW1/4 Sec. 17, T.22N., R.2W.	Hood Canal
#34 Shoefly Creek and tributaries SE1/4SW1/4 Sec. 18, T.22N., R.2W.	Hood Canal
#46 Caldervin Creek and tributaries NE1/4NE1/4 Sec. 28, T.21N., R.3W.	Hood Canal
#50 Hall Creek and tributaries Sec. 20, T.21N., R.3W.	Hood Canal
#52 Hoddy Creek and tributaries Sec. 20, T.21N., R.3W.	Hood Canal
#54 Fay Creek and tributaries Sec. 21, T.20N., R.3W.	Hood Canal
#55 Brown Creek and tributaries Sec. 21, T.20N., R.3W.	Hood Canal
#56 Unnamed Stream (West Creek) and tributaries Sec. 20, T.22N., R.3W.	Hood Canal
#101 Harding Creek and tributaries NW1/4SW1/4 Sec. 9, T.24N., R.2W.	Hood Canal
#164 Unnamed Stream (Little Boston Creek) and tributaries SW1/4SW1/4 Sec. 5, T.27N., R.2E.	Port Gamble
#181 Unnamed Stream and tributaries SE1/4SW1/4 Sec. 26, T.27N., R.2E.	Apple Tree Cove
#184 Unnamed Stream and tributaries NE1/4SW1/4 Sec. 36, T.27N., R.2E.	Apple Tree Cove
#190 Unnamed Stream and tributaries Sec. 9, T.26N., R.2E.	Puget Sound
#196 Cowling Creek and tributaries NW1/4NW1/4 Sec. 16, T.26N., R.2E.	Miller Bay
#198 Thompson Creek and tributaries SW1/4SE1/4 Sec. 29, T.26N., R.2E.	Port Orchard
#208 Johnson Creek and tributaries SE1/4NW1/4 Sec. 22, T.26N., R.1E.	Liberty Bay
#213 Scandia Creek and tributaries SW1/4NE1/4 Sec. 27, T.26N., R.1E.	Liberty Bay
#241 Mosher Creek and tributaries SW1/4NE1/4 Sec. 34, T.25N., R.1E.	Dyes Inlet
#272 Anderson Creek and tributaries SE1/4NE1/4 Sec. 33, T.24N., R.1E.	Sinclair Inlet
#275 Ross Creek and tributaries SE1/4SE1/4 Sec. 27, T.24N., R.1E.	Sinclair Inlet
#289 Beaver Creek and tributaries NW1/4SE1/4 Sec. 16, T.24N., R.2E.	Rich Passage
#322 North Creek and tributaries NE1/4SE1/4 Sec. 6, T.21N., R.2E.	Gig Harbor

#342 Unnamed Stream and tributaries NW1/4SE1/4 Sec. 10, T.21N., R.1E.	Henderson Bay
#343 Unnamed Stream (Meyer Creek) and tributaries SW1/4SW1/4 Sec. 2, T.21N., R.1E.	Hood Canal
#407 Unnamed Stream and tributaries SE1/4NW1/4 Sec. 2, T.21N., R.1W.	Vaughn Bay
#434 Unnamed stream and tributaries SE1/4SE1/4 Sec. 15, T.25N., R.2E.	Murden Cove
#461 Unnamed Stream and tributaries SE1/4NE1/4 Sec. 20, T.25N., R.2E.	Fletcher Bay
#514 Unnamed Stream (Fisher Creek) and tributaries SW1/4NW1/4 Sec. 19, T.22N., R.3E.	Quartermaster Harbor
#530 Jod Creek and tributaries NW1/4NW1/4 Sec. 14, T.22N., R.2E.	Colvos Passage
#540 Needle Creek and tributaries NE1/4SE1/4 Sec. 13, T.23N., R.3E.	Colvos Passage

(4) Closures listed in WAC 173-515-040 (2) and (3) will supersede low flow surface water source limitations previously imposed by administrative authority pursuant to chapter 75.20 RCW.

(5) Lakes perennially tributary to closed streams are closed to further consumptive appropriation.

[Statutory Authority: Chapters 90.22 and 90.54 RCW. 81-16-003 (Order DE 80-45), § 173-515-040, filed 7/24/81.]

WAC 173-515-050 Groundwater. Future groundwater withdrawal proposals will not be affected by this chapter unless it is determined that such withdrawal would clearly have an adverse impact upon the surface water system contrary to the intent and objectives of this chapter.

[Statutory Authority: Chapters 90.22 and 90.54 RCW. 81-16-003 (Order DE 80-45), § 173-515-050, filed 7/24/81.]

WAC 173-515-060 Lakes. In future permitting actions relating to withdrawal of lake waters, lakes and ponds shall be retained substantially in their natural condition. Withdrawals of water which would conflict therewith shall be authorized only in those situations where it is clear that overriding considerations of the public interest will be served.

[Statutory Authority: Chapters 90.22 and 90.54 RCW. 81-16-003 (Order DE 80-45), § 173-515-060, filed 7/24/81.]

WAC 173-515-070 Exemptions. (1) Nothing in this chapter shall affect existing water rights, riparian, appropriative, or otherwise, existing on the effective date of this chapter, nor shall it affect existing rights relating to the operation of any navigation, hydroelectric or water storage reservoir or related facilities.

(2) If, upon detailed analysis, appropriate and environmentally sound proposed storage facilities are found to be compatible with this chapter, such facilities may be approved but will be subject to the establishment of appropriate protection flows for drought or low runoff periods.

(3) Domestic use for a single residence shall be exempt from the provisions of this chapter. If the cumulative effects of numerous single domestic diversions would seriously affect the quantity of water available for instream uses, then domestic in-house use shall be exempt if no alternative source is available.

(4) Stockwatering use, except that related to feedlots, shall be exempt from the provisions established in this chapter.

(5) Future rights for nonconsumptive uses may be granted.

[Statutory Authority: Chapters 90.22 and 90.54 RCW. 81-16-003 (Order DE 80-45), § 173-515-070, filed 7/24/81.]

WAC 173-515-080 Future rights. No right to divert or store public surface waters of the Kitsap water resource inventory area (WRIA) 15 shall hereafter be granted which shall conflict with the purpose of this chapter.

[Statutory Authority: Chapters 90.22 and 90.54 RCW. 81-16-003 (Order DE 80-45), § 173-515-080, filed 7/24/81.]

WAC 173-515-090 Enforcement. In enforcement of this chapter, the department of ecology may impose such sanctions as appropriate under authorities vested in it, including but not limited to the issuance of regulatory orders under RCW 43.27A.190 and civil penalties under RCW 90.03.600.

[Statutory Authority: Chapters 43.21B, 43.27A, 90.22 and 90.54 RCW. 88-13-037 (Order 88-11), § 173-515-090, filed 6/9/88. Statutory Authority: Chapters 90.22 and 90.54 RCW. 81-16-003 (Order DE 80-45), § 173-515-090, filed 7/24/81.]

WAC 173-515-095 Appeals. All final written decisions of the department of ecology pertaining to permits, regulatory orders, and related decisions made pursuant to this chapter shall be subject to review by the pollution control hearings board in accordance with chapter 43.21B RCW.

[Statutory Authority: Chapters 43.21B, 43.27A, 90.22 and 90.54 RCW. 88-13-037 (Order 88-11), § 173-515-095, filed 6/9/88.]

WAC 173-515-100 Regulation review. The department of ecology shall initiate a review of the rules established in this chapter whenever new information, changing conditions, or statutory modifications make it necessary to consider revisions.

[Statutory Authority: Chapters 43.21B, 43.27A, 90.22 and 90.54 RCW. 88-13-037 (Order 88-11), § 173-515-100, filed 6/9/88. Statutory Authority: Chapters 90.22 and 90.54 RCW. 81-16-003 (Order DE 80-45), § 173-515-100, filed 7/24/81.]