ISLAND COUNTY

COORDINATED WATER SYSTEM PLAN

REGIONAL SUPPLEMENT

VOLUME I

January, 1990

Prepared by

ECONOMIC AND ENGINEERING SERVICES, INC.

In Conjunction With

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And
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January 8, 1990

File #: 4121

Mr. Larry Kwarsick, Director
Island County Planning Department
PO Box 5000
Coupeville, WA 98239

Subject: Island County Coordinated Water System Plan

Dear Larry:

Economic and Engineering Services, Inc. (EES), in conjunction with its subconsultants R.W. Beck and Associates, Inc. and Hart-Crowser and Associates, Inc., is pleased to submit the final Regional Supplement of the Island County Coordinated Water System Plan (CWSP). This document provides direction and guidance for the future planning, management, and operation of water systems within Island County. The Regional Supplement has been designed as a set of County-wide policies to ensure that water system planning and development are orderly, efficient, and responsive to the objectives of the Island County Comprehensive Plan.

This document incorporates the major policies, procedures, and recommendations jointly developed by and for the water purveyors of Whidbey and Camano Islands. The development of the CWSP has been guided by the Water Utilities Coordinating Committees, made up of water purveyor representatives, and by active input from other interest groups and members of the public. Included in the Regional Supplement are the recommended review procedures, minimum design requirements, designated service areas, and other provisions required by law for a CWSP. The Water System Plans of individual purveyors are an essential element of the CWSP and are integrated with, and appended to, this document by reference.

The final Regional Supplement includes specific changes which were made following staff review and public hearing. With the exception of minor editorial changes, the revisions were made exactly as requested in the transmittal by Matt Nash on November 29, 1989, or as subsequently discussed with and approved by Mr. Nash. The following are several significant changes which were requested:

1. Replacement of Section I of the Regional Supplement with the version prepared by County Staff.

2. Addition of a new Section on Water Use Efficiency, with recommended conservation program provisions prepared by County Staff.

3. Reference to the new Sea Water Intrusion Policy adopted jointly by Island County Health Department and the State Department of Health.

4. Revisions to the Satellite System Management Program.

5. Substitution of a Public Works Department Budget for the projected Source and Application of Funds table originally included.

6. Insertion of Conservation, Redistribution of Ground Water, and "Alternate Methods", among the supply alternatives. Discussion of Redistribution and Alternate Methods was included as provided by the County.

7. Establishment of an Appendix which includes the Analysis of Water Importation as a future supply alternative for Whidbey and Camano Islands. This analysis was originally part of the Regional Water Supply Plan.

The Island County CWSP should become a vital part of meeting the collective challenge of managing the County's growth and providing for the needed public water supplies. The tireless efforts of the many volunteer members of the Water Utility Coordinating Committees and of County Staff, should be commended. EES has appreciated the opportunity to assist the County and the WUCCs in this process. We look forward to the final adoption of the CWSP and its successful implementation.

Sincerely,

John A. Segerson, P.E.
Senior Associate

JAS:eas:A

Enclosure

ACKNOWLEDGEMENTS

The following individuals made active contributions to the development of this Coordinated Water System Plan Regional Supplement, and their assistance is greatly appreciated:

Matt Nash, Island County Planning Department
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Lew Naddy, Town of Coupeville
Ryan Goodman, City of Oak Harbor
Dave Ford, City of Anacortes

Committee Chairmen

Tom Roehl, Steering Committee and Whidbey WUCC
George Wyse, Camano WUCC

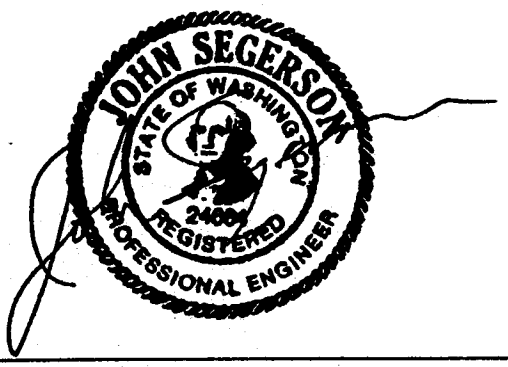
Many Past and Present Members of the Whidbey and Camano WUCCs, together with interested members of the public, who attended and contributed to meetings and hearings.

CERTIFICATE OF ENGINEER

ISLAND COUNTY
COORDINATED WATER SYSTEM PLAN

1990

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



John A. Segerson, P.E.
Senior Associate

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GLOSSARY OF TERMS AND ACRONYMS

The following definitions are applicable to interpretation of the CWSP. Additional definitions may be found in Chapter 248-54 WAC, "Rules and Regulations of the State Board of Health Regarding Public Water Systems," August 1983, Department of Health, Water Supply and Waste Section, LD-11, Olympia, WA 98504.

ACRONYMS

AFY	Water volume expressed as acre-feet per year.
AWWA	The American Water Works Association.
BICC	Board of Island County Commissioners.
CWSP	Coordinated Water System Plan (Chapters 70.116 and 90.54 RCW).
CWSSA	Critical Water Supply Service Area (Chapter 70.116 RCW and Chapter 248-56 WAC).
Ecology	Department of Ecology, State of Washington.
EES	Economic and Engineering Services, Inc.
DOH	Department of Health, State of Washington.
EPA	United States Environmental Protection Agency.
FmHA	Farmers Home Administration.
gpcd	gallons per capita per day.
gpd	gallons per day.
gpm	gallons per minute.
GWMP	Ground Water Management Plan.
MCL	Maximum Contaminant Level.
MGD	Million gallons per day. Sometimes used to represent a total annual use, expressed as average daily rate. Equivalent to approximately 700 gpm or 1,120 acre-feet per year. Based on 100 gallons per capita per day, one MGD is approximately sufficient for a population of 10,000.

ICPD	Island County Planning Department.
ICPW	Island County Public Works Department.
ICHD	Island County Health Department.
OFM	Office of Financial Management.
ppm	parts per million.
PRD	Planned Residential Development.
PUD	Public Utility District.
RCW	Revised Code of Washington.
RWA	Regional Water Association.
SDWA	Safe Drinking Water Act.
SEPA	Washington State Environmental Policy Act.
SSMA	Satellite System Management Agency.
USRP	Utility Service Review Procedure. An administrative procedure set up 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)
WAC	Washington Administrative Code.
WRIA	Water Resource Inventory Area.
WUCC	Island County Water Utilities Coordinating Committee.

<u>TERMS</u>

Designated Purveyor	A water purveyor 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. (See Water System Plan.)

Expanding Water System	An existing water system which is undertaking new construction to provide water service to additional service connections outside of its approved service area. A water system, with plans and specifications approved by DOH and the ICHD may install up to its approved number of service connections, utilizing an approved design or existing mains, without being considered an expanding 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.
Franchise	A grant or permit in which a utility is permitted by the County to construct and maintain facilities in County rights-of-way.
Intertie	A physical connection between individual water systems which allows water supply to be transferred on one or both directions. An intertie can be established as a primary source, secondary or peaking supply, or an emergency supply. Ordinarily, the use of an intertie is governed by written agreement or contract between the utilities. A modification to water rights issued by Ecology may also be required.
Land Use Designation	Designation of a geographical area to certain uses by right or permit, as provided in the Island County Comprehensive Plan and Zoning Ordinance.
Level of Service	Operational features, such as pressure, flow, reliability, etc., provided to the customer connection by the water system.
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	As defined in Chapter 248-54 WAC: "Any system or water supply intended or used for human consumption or other domestic uses, including source, treatment, storage, transmission, and distribution facilities where water is being furnished to any community, collection, or number of individuals, but excluding a water system serving one single family residence."
Purveyor	"Any agency or subdivision of the State or any municipal corporation, firm, company, mutual, or cooperative association, institution, partnership, or person, or any other entity that owns or operates a public water system. It also means the authorized agents of any such entities." (WAC 248-54-015)
Regional Water Association	A group of water purveyors who have joined together through a formal process to resolve mutual problems relating to water quantity and quality; to reduce capital costs of improvements through economy of scale; to share information relating to common problems; and, to provide joint management, coordinated testing, and contingencies planning.
Satellite System	A water system whose service area is generally remote from other existing systems, or for which connection to adjacent water systems is not feasible, and which is managed and operated by an entity which also operates other water systems.
Satellite System Management Program	A program to provide the availability of technical assistance and contract services through the Satellite System Management Agency.
Satellite System Management Agency	An entity or individual which owns, operates, and/or provides technical assistance to small water systems.
Service Area	Location which is 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 ICHD.

Service Area Agreement	A standard agreement completed by water utilities which acknowledges service area boundaries as shown on Master Service Area Maps on file with the County. Utilities may also have supplemental agreements which establish interim service areas or special exceptions to the standard agreement.
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.
Utility	See Public Water System.
Water System Plan	A written plan prepared for a particular water system and service area which describes existing facilities and 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 Chapter 248-54 WAC.

SECTION I

SUMMARY

1. INTRODUCTION AND BACKGROUND

This document is the Regional Supplement of the Island County Coordinated Water System Plan (CWSP). The term "supplement" refers to the individual water system plans required of many utilities in the County. These utilities are required to prepare plans which are consistent with the provisions of the Regional Supplement. The policies and recommendations herein are intended as guidance to these utilities so that water supply planning may be "coordinated" throughout the County. Each water system plan submitted will be reviewed by the County and the Washington State Department of Health (DOH) for consistency with the adopted Regional Supplement. Once approved, the individual plans may then be considered a part of the County's CWSP.

The Regional Supplement was developed by Economic and Engineering Services, Inc. (EES) under the direction of the Water Utility Coordinating Committee (WUCC) and Steering Committees, and in accordance with an amended contract between Island County and EES dated August 25, 1986. R.W. Beck and Associates, Inc. completed an assessment of existing water systems (Section IV) and regional water supply planning (Section VIII). Support was also provided by Hart-Crowser & Associates, Inc., who completed a groundwater resource evaluation. The Committees were appointed in 1985 by the Board of Island County Commissioners (BICC) and included representatives of water purveyors, local governments, interested parties, and agencies responsible for water supply and public health in Island County.

The overall objective of the coordinated planning process is for utilities and agencies to jointly address problems of current and future domestic/municipal water supply, based on local needs and resources. In an area such as Island County, where the majority of public water supplies are provided by small water systems, the impacts of population growth can present serious challenges to both financial and technical resources. Also, because of limited groundwater resources in the County, there has been a tendency for purveyors with supply problems to expect solutions from local government, and for those with adequate supply to curtail customer growth in order to protect those supplies. The CWSP is a policy framework in which utilities, agencies, and the public can begin to focus and prioritize efforts to ensure the reliability of the County's entire existing water resource and prepare for future needs in an orderly and efficient manner. Once adopted by the County and DSHS, the CWSP is reviewed every 5 years and amended, as necessary, to meet changing needs.

The policies, procedures, and guidelines presented herein were jointly developed in cooperation with the Island County Health Department (ICHD), the Island County Planning Department (ICPD), the Island County Engineering Department (ICED), the Island County Fire Marshal, Island County Building Department, water purveyors, other parties represented on the WUCC, the Department of Ecology (Ecology), and DOH.

2. PROJECT AUTHORIZATION

The authority for preparation of the CWSP is established by the Public Water Systems Coordination Act (RCW 70.116), enacted by the Washington State Legislature in 1977. This statute, referred to as the "Coordination Act," follows the principles of the State's fundamental water resource policy set forth in the Water Resources Act of 1971 (RCW 90.54). It authorizes the establishment of state-wide procedures (e.g. WAC 248-56) for public water utilities in a given geographical area to coordinate their planning and construction programs with those of other utilities and with the planning of local government.

The responsibility for lead agency was assigned to the ICPD. The ICPD applied to DOH for grant funding under the Washington Referendum 38 Planning Grant Program. The grant funding application included a scope of work for the planning study which had been approved by the Island County WUCC.

3. PRELIMINARY ASSESSMENT AND CRITICAL WATER SUPPLY SERVICE AREA (CWSSA) DECLARATION

As a preface to implementing the Coordination Act, a "Preliminary Assessment" of water system issues was completed for Island County in 1985. The Preliminary Assessment identified several issues of concern in Island County that may preclude the delivery of a safe, efficient, and reliable water service to the citizens of the County. Those issues include:

- Proliferation of small water systems.
- Possible limitation of groundwater quantity available in Island County.
- Lack of coordination between adjacent water utilities.
- Water quality problems, such as salt water intrusion and iron/manganese content.
- Operation and management of small water systems, including funding of improvements.
- Lack of consistency between water system planning and County land use policies.

Due to the variety and depth of these problems and concerns, the Preliminary Assessment recommended implementation of the Coordination Act in Island County.

Following this recommendation, the BICC, on August 19, 1985, adopted a declaration that a CWSSA be declared for Island County. This action initiated the procedures of the Coordination Act. Following the procedures and criteria of WAC 248- 56, described in Section II, the BICC appointed a WUCC for preparation of the CWSP, and determined that the external boundaries of the CWSSA would encompass the entire County.

4. RELATIONSHIP TO OTHER STUDIES

A comprehensive evaluation of water supply and water resource issues in Island County was a goal shared by the WUCC and Island County. The majority of all supplies in Island County emanate from groundwater sources. Island County was designated a Sole Source Aquifer area in April 1982. Designation of a Sole Source Aquifer is authorized by Section 1424(e) of the Safe Drinking Water Act when "an area has an aquifer which is the sole or principal drinking water source for the area and which, if contaminated, would create a significant hazard to public health." This designation, by the Environmental Protection Agency, requires any federally financed project to be planned or designed to ensure that it will not contaminate the aquifer. The notice of final determination of Island County as a Sole Source Aquifer was published in the Federal Register, Volume 47, Number 66, April 6, 1982.

Two investigations of groundwater resources, conducted by the U.S. Geological Survey (USGS), were completed in 1985 and 1988, respectively. These were jointly funded by USGS, Ecology, and Island County. The studies focused on regional groundwater characterization, and factors influencing salt water intrusion in Island County.

A Ground Water Management Plan (GWMP) process was initiated under the Ground Water Management Act of 1985 to establish simultaneous and comprehensive planning policies related to the groundwater resource. The GWMP is sponsored by Ecology with the intent of developing methods to protect the quality and quantity of groundwater, meet future resource needs while recognizing existing water rights, and integrate State and local policies for management of groundwater resources.

In combination, the GWMP will establish methods to properly monitor and protect the resource, while the CWSP will provide administrative procedures and a regional strategy for management and development of public water supplies. Both documents, however, are supplementary to the adopted Island County land use policies.

5. FINDINGS AND RECOMMENDATIONS

Implementation of the Public Water System Coordination Act has provided an opportunity to address a variety of technical, financial, and administrative problems associated with water utility service in Island County. The following is a summary of the major findings and associated recommendations which were developed during preparation of the CWSP.

A. Administration

(1) Findings

(a) In June 1989, Island County citizens were served by 582 public water systems currently documented with DOH and ICHD, plus an unknown number of undocumented systems. Of the documented systems, most have facilities whose design has been approved by DOH or the ICHD.

(b) Approval of water system design is carried out through an inter-governmental agreement between ICHD and DOH. The agreement gives ICHD authority for approval and monitoring of systems with 2 through 9 connections. The ICHD is the principal technical resource for water purveyors in the County.

(c) A franchise and permit process is used for installation of utilities in County road rights-of-way. Franchises are non-exclusive and do not establish a definite boundary for capital improvement planning, or preference for service by a particular purveyor.

(d) Water system design standards, as addressed in existing Island County Codes, have several provisions that are inconsistent and difficult to interpret. Provisions relating to fire flow are generally acceptable but should be structured to recognize future land use, as well as existing development and system size.

(e) Water systems managed by homeowner organizations have limited options for funding capital improvements because many of the governmentally sponsored assistance funds are available only to municipalities.

(f) Island County government does not presently operate any municipal water systems, and has not pursued a role as a water purveyor.

(g) The County has recently adopted a salt water intrusion policy (Appendix L) which establishes saline contamination risk categories for water systems using or planning to use groundwater resources, and imposes testing and design requirements for water systems within each risk category; approval of new water systems is contingent upon satisfying these requirements.

(h) New well approvals for subdivisions are also contingent upon satisfying the requirements of the Island County sewage waste disposal regulations (ICC 8.07B).

(2) Recommendations

(a) In order to facilitate cooperative and coordinated water system development and operation, Regional Water Associations (RWA) should be established. Water system membership in the RWAs is voluntary. By pooling resources, RWAs can assist systems by coordinating shared facilities and system management.

(b) Water system plans prepared by purveyors in accordance with WAC 248-54 should incorporate the findings and conclusions of the Regional Supplement and relevant recommendations of the GWMP. Non-expanding systems are encouraged to consider these findings in their operations. Following adoption of the CWSP, a new water system will not be established or an existing system allowed to expand service unless a comprehensive water system plan has been approved by DOH and Island County.

(c) Following adoption of the CWSP, when an application for a water right for public supply is received by Ecology, it should be sent to Island County for comment on whether the applicant is authorized to serve the area, and whether the available supply is likely to be adequate. Aquifer test procedures should be coordinated with Ecology, DOH, and ICHD. Processing of the water right should be held in abeyance until the matter is resolved.

(d) The ICPW should serve as lead agency for implementation of the CWSP.

(e) The ICHD should be reinforced as a principal contact point for all water system approvals, and as a source of regulatory and technical advice to water purveyors.

(f) All water systems operated by municipal corporations (cities, incorporated towns, and water districts), and any expanding water systems, should complete a standard Service Area Agreement establishing their designated area for service planning. The service area boundaries established through the CWSP process should be authorized by the County franchise program for the provision of utility service. Service area boundaries can be formalized through the ICHD upon completion, by the utility, of the appropriate requirements.

(g) A new Chapter 13.03A should be enacted as proposed herein. The Island County Fire Marshal should review water system plans for compliance with minimum fire flow standards, as provided in Section VII. Fire protection standards enforcement, employed by the Fire Marshal when approving site improvements, should include compliance by the water utility with minimum standards and compliance of construction with Uniform Fire Code, ISO, NFPA, as appropriate.

(h) The Utility Service Review Procedure (USRP), outlined in this Regional Supplement, should be adopted for review of any newly identified need for public water service. This procedure, as part of a land use action approval, is structured so that existing water systems are considered first in responding to new public water supply needs. Where service areas have yet to be documented, the County recognizes approved water system plans as delineating service area boundaries. New water systems, however, may still be considered when:

- Existing adjacent purveyors, designated purveyors, or satellite system operators and/or purveyors are unable or unwilling to provide service in a timely and reasonable manner; and,

- It is substantiated that the new water system proposed by an applicant has a permanent commitment and capability to serve the water supply needs of the proposed building, complex, or development. (Requirements of timely and reasonable service are discussed in Section VII.)

The goals of this review procedure are to protect the County's water supply, to limit the proliferation of inadequate water systems, and to ensure the delivery of cost-effective, long-term water supplies in full compliance with County, State, and federal regulations.

(i) A Satellite System Management Program should be administered jointly by DOH and Island County. Under the program, agencies acting as providers of comprehensive water system services will be pre-qualified by meeting requirements established by Island County. RWAs or individual utilities may contract for a range of services as needed from pre-qualified providers. Included among these services are regular maintenance and repair, water quality monitoring, conservation retrofitting, engineering, and overall utility management. When, under USRP approval, a new water system is designated to be managed and operated by a Satellite System Management Agency (SSMA), the ownership can be transferred to the SSMA.

(j) Within 1 year after final adoption of the CWSP, the County agencies and Board of Commissioners should review the implementation of CWSP recommendations.

(k) Disputes which arise among water service applicants, developers, and/or purveyors concerning terms of service should be reviewed by an Appeals Board established by the County. If no mediated solution is found, the dispute should be referred, with recommendations, to the BICC.

(l) Island County should establish a timely review process for water system plans. County review should be based on specific criteria to establish that a water system plan is consistent with land use planning and development policies, fire flow requirements, franchise requirements, and health ordinances.

(m) Prior to project preliminary approval, requirements of the land use review process (ICC 16.19) and the sewage disposal system codes (ICC 8.07B), including any water resource availability provisions, should be met.

(n) Island County should establish a Public Works Department as lead agency for purposes of providing technical assistance to RWAs and water purveyors and to provide incentive programs to meet water system retrofitting and conservation objectives. The Public Works Department would also act as coordinator for SSMAs.

B. Water Resource Strategy

(1) Findings

(a) Local groundwater is the exclusive source of supply for Island County, except those connections which are supplied by the Oak Harbor pipeline. In spite of this, very few water systems have meters to accurately monitor groundwater use from sources in service.

(b) The evaluation of water supply alternatives in Section VI concludes that development of local wells will remain the most important priority for near-term water supply. Some areas, however, may already be at or above the available withdrawal capacity. These areas must depend on optimization of existing wells, conservation programs as listed in Section VI, and cooperative joint development or joint operations with adjacent utilities to provide additional effective yield. In areas experiencing saltwater intrusion, and/or deterioration in water quality, prudent utility management must include aggressive monitoring of both water quality and quantity trends to ensure the safety of existing supplies. Furthermore, contingency plans for loss of current water supply will be necessary.

(c) Individual household wells typically draw from shallow groundwater. Therefore, they are particularly susceptible to the declines in water level associated with areas in which groundwater withdrawal approaches or exceeds available capacity. Individual wells are not currently included in water supply planning and management programs. A database being developed for the GWMP includes some information about individual wells, however, a comprehensive inventory does not presently exist.

(d) Conservation measures can significantly reduce demand on the resource and can effectively provide additional resource base.

(e) Lack of experience among water purveyors, many of whom are volunteers, has led to additional problems. Quality and quantity problems are not addressed until their impacts are felt. There persists a general lack of awareness of regional supply problems and of the benefits which could be derived from implementing conservation measures.

(2) Recommendations

(a) Water purveyors should continue to rely on groundwater as a primary water source.

(b) A high priority should be placed by all water purveyors on monitoring the use and quality of groundwater sources. Indications of decline in water levels or quality should be confirmed by more precise monitoring and, if necessary, contingency plans initiated.

(c) A data base of water resource information should be maintained by the County to be used as a source of guidance in location and construction of wells and use of groundwater. The database should include an inventory of all well locations, well construction and design information, and information on the quality and quantity of water use. In order to record necessary data from newly constructed sources, it is recommended that appropriate new well data be entered into the County's groundwater data management system. Permitting or registration of all wells is being reviewed by the Ground Water Advisory Committee and would provide a comprehensive means of obtaining data from wells.

(d) A GWMP should be completed and adopted by the County in order to provide for protection of existing sources.

(e) Resource policies recommended by the GWMP should be incorporated in water system plans.

(f) All new and expanding water systems should include in their comprehensive plans contingency provisions for water shortage or source failure. The contingency plans should include source alternatives, storage improvements, conservation measures, adjustment of user rates and fees, and notification plans. The contingency plans must address

actions by the water purveyor in case of drought, contamination of water supplies, and unanticipated demand. Guidelines for the preparation of water shortage response plans are available from DOH.

(g) A request should be made to State agencies (DOH and Ecology) to provide technical and financial assistance to improve water use efficiency. Public education programs and specific information about conservation options should be made available.

(h) A water conservation policy should be established identifying specific guidelines for efficient use and protection of available resources.

(i) Each water purveyor should verify that Ecology has properly recorded water rights for the sources and service area of the water system. A water right application should be filed immediately if it is found that no water rights have been recorded. If a water right is recorded for substantially more than installed capacity, and the purveyor wishes to retain the rights, a groundwater geologist should be consulted to evaluate the likelihood of developing another source in the same aquifer. In this way, an increase in source reliability can result for the water system. An application to transfer the unused water right to a new point of withdrawal should be submitted to Ecology requesting the same priority date. If a water right is recorded for a source which cannot or will not be used, the water right should be relinquished. Ecology should be requested to review all existing water rights to identify any that are not in beneficial use.

(j) Purveyors should become familiar with the monitoring requirements of the salt water intrusion policy (Appendix L) and voluntarily begin monitoring as outlined in the policy.

C. Water Purveyor Planning and Operations

(1) Findings

(a) Adoption of a Water General Plan, pursuant to the County Services Act (RCW 36.94), would provide the necessary authority for an expanded County role as water purveyor and enable participation by the County in providing funding

assistance to existing water systems. A County Public Works Department and/or non-profit regional water associations could implement a regional water supply development and management program.

(b) More than half of Island County's population resides in the North Whidbey census division. This area's water service is dominated by the Oak Harbor water system, supplied by the City of Anacortes. This system has the potential of delivering additional supplies to the region, but the following considerations should be kept in mind: 1) costs of major trunk line extensions; 2) cost of expansion to the existing Anacortes treatment facility; 3) any additional capacity could be subject to interruption to meet the needs of Oak Harbor, which has a contractual priority for use of the water supplied in the pipeline; 4) water rights competition for, and availability of, Skagit River water, the source for the Anacortes supply. Currently, Island County holds no rights to Skagit River water.

(c) Water supplies in the Town of Stanwood have additional capacity which could be used to supply portions of Camano Island. Again, there would be significant costs associated with transmission and storage, and terms of wholesale supply must be negotiated with Stanwood.

(d) Several areas of the County have a problem with saltwater intrusion in water supplies. Areas having severe problems have been identified in the GWMP Technical Memorandum. There is evidence that the incidence of saltwater intrusion is correlated to withdrawals exceeding available groundwater, but the geohydrologic system is complex and other factors may dominate in some areas.

(e) Projections of water supply commodity requirements for Island County through the year 2040 were made using population projections of the Island County Planning Department and the Washington Office of Financial Management (OFM). These projections exclude agriculture, mining, and other non-domestic supply uses. Estimated seasonal (i.e. summer transitory) demand was included. The total annual domestic supply requirements for Island County were estimated as between 13.7 and 18.3 MGD (15,344 and 20,496 AFY). Current demand is estimated as approximately 5.5 MGD (6,160 AFY). The

supply requirements in the northern portion of Whidbey Island may be substantially met by the Oak Harbor supply system, which has a potential capacity of approximately 10 MGD or more.

(f) Many small water utilities in Island County are operating with limited finances, staff, technical expertise, and other resources. These systems have difficulty meeting current needs, are unaware of regulations affecting them, and are often unable to meet additional requirements imposed by growth. The small size and inadequate revenue base of many of these utilities will make it difficult to finance needed improvements. Staffing of such water systems is usually on a volunteer basis and needed maintenance and monitoring may be overlooked. State support is needed to facilitate cost-effective improvements and, where beneficial to both utilities, the County and State should encourage the merger of these systems with adjacent larger utilities capable of providing a higher level of service. Satellite management services may also provide this assistance.

(g) Water rights for public water systems, as well as other permitted uses, appear to be outdated and in need of review and correction by right-holders and Ecology. Purveyors may have recorded rights on sources not in use, or used in substantially lesser quantity than certificated by water right. State law requires that water rights correspond to legitimate actual use. Currently, however, total water rights for domestic multiple and municipal uses exceed the projected supply requirement for the year 2040.

(h) With the exception of the water systems of the Cities of Oak Harbor and Langley, the Town of Coupeville, and the Clinton Water District, there is no significant expansion of service areas planned within the County. Some smaller water systems are included in the planned expansion areas of these utilities. Most water systems are established to serve platted areas and have not submitted plans for expansion.

(i) Development of interconnections between utilities (interties) has not taken place to a great extent in Island County, although some exist for emergency use. There is a reluctance among utilities to export surpluses which may someday be necessary to meet any future shortages, and

which obviate the risk of additional well construction. Also, older water rights may not allow for use outside specific service areas. Updating of water rights to allow for use in intertied areas may be necessary.

(2) Recommendations

(a) Purveyors planning expansion of service areas must submit a comprehensive water system plan to DOH and Island County within 1 year of final adoption of the CWSP, in accordance with WAC 248-54-065 and WAC 248-54-710. Plans submitted after the above deadline will be handled in order of submittal to DOH and Island County.

(b) Purveyors who prepare a comprehensive water plan should include in their capital improvement plans a review of the regional supply plan outlined in this Regional Supplement, and an identification of possible intertie locations with adjacent systems. Joint development and use of groundwater supplies should especially be considered. Sizing of facilities should be decided with future regional systems considered. Interties and other joint use facilities should be installed to benefit both utilities and to accomplish regional objectives of reliability and efficient resource management.

(c) Purveyors participating in interties, regional supply, or shared facilities should identify either Whidbey or Camano Island as the point of use for any water rights applications. Furthermore, when utilities are proposing regional or shared facilities, Ecology should be requested to revise existing rights to include the expanded place-of-use appropriate for such facilities.

(d) Purveyors should include in capital facilities planning the capability to provide fire flow, as required by the Minimum Design Standards.

(e) RWAs should explore regional facilities planning strategies, including satellite system support, resource protection, and conservation measures.

(f) New and expanding systems must develop and implement the following conservation measures:

- Installation of individual and source meters.

- o Implementation of rate structures that encourage conservation.
- o Development and implementation of a leak detection and repair program.
- o Outline water use restrictions for customers in drought periods in the operation and maintenance agreement.

It is recommended that existing systems implement the same conservation measures.

D. Land Use Strategy

(1) Findings

(a) The natural beauty and unique character of the islands continues to attract people to the community. There has been growth in population and intensity of urbanization in the Oak Harbor zone of influence since the adoption of the Island County Comprehensive Plan in August 1977. This has created new demands on planning for community facilities.

(b) A major problem confronting the community is how to plan for the wise use of the islands' resources without destroying the amenities which are attracting people to the area and are the common roots that hold the community together.

(c) The historical, rural, forested, and agricultural characteristics of the County must be protected from the unplanned dispersal of residential development.

(d) Future growth should be staged and orderly in keeping with the capacity of the islands to support that growth. Thus, the holding capacity of the islands could be limited to those developing areas capable of supporting anticipated population growth (Master Goal/Policies).

(e) A high quality living environment shall be maintained by careful use of land, water, and air resources (Master Goal/Policies).

(f) Natural resources are to be intensively managed to foster perpetual productivity of renewable resources and careful conservative use of non-renewable resources (Master Goal/Policies).

(g) The provision and management of public utilities (sewer, water, solid waste disposal, drainage) should be economically self-sustaining and planned to facilitate coordinated land use management (Master Goal/Policies).

(h) Island County is to provide leadership in the coordination of essential public utilities at the least possible cost (Master Goal/Policies).

(i) Since all groundwater in Island County results from rainfall infiltration, the uses of land and associated impacts on recharge quality and quantity, have implications for public water supply.

(j) To assure a quality living environment (maintaining the public health, safety and general welfare) full citizen participation is necessary in planning, decision making, and protecting the resource (Master Goal/Policies).

(k) Amendments to the Island County Comprehensive Plan should be made only after careful analysis of developing trends and a finding that any proposed amendment is in the common interest of the people of Island County.

(2) Recommendations

(a) The Coordinated Water System Plan will be consistent with the County's goal to "serve as lead organization in the coordination of low cost public utilities to maintain the health, safety, and well being of the community", if conformance to the following policies is maintained:

- o Island County should utilize public utilities as tools to create compact, well-designed, and economically efficient clustered and rural communities.
- o Extension of urban services and utilities should be confined to areas planned for urban development densities and support the optimal land use plan.

- o Public utility systems should be reasonably scaled in size to accommodate anticipated population growth. Over-building should be avoided, so that present residents will not be required to absorb the costs and inefficiency of supporting large, under-utilized systems.

- o Public facilities and utilities should be designed and located in a manner which protects the integrity of planned land uses, existing land forms, drainage ways and natural systems.

- o Extension of public facilities over many acres of undeveloped land to serve isolated pockets of existing development should be avoided unless measures can be implemented to encourage clustering of future development along the extension corridor.

- o Extension of urban utility services should be carefully staged in order to discourage untimely new development in areas that lack adequate planning and infrastructure funding.

- o Island County should become a major coordinator of domestic water supplies by encouraging and aiding, through a Satellite System Management Program, the consolidation of small systems in areas where no municipal purveyors are presently established. In areas where there exist municipal purveyors (city, town or water district), then service should be supplied to planned expansion areas by these municipal systems. Island County should take a leading role in planning for water services to ensure that duplications or conflicts do not arise.

(b) The Utility Service Review Procedure (USRP) and the formation of small RWAs are seen as significant tools needed both to facilitate coordinated land use management and provide adequate improvement for the protection and delivery of public water supplies at the least possible cost to consumers and taxpayers.

(c) The "Minimum Design Standards for Water Works" provide the means of assuring that water systems will be constructed to provide adequate water distribution, pressure, storage, and treatment for domestic use and fire protection.

(d) Unless a GWMP is finished and adopted by Island County as an element of the Comprehensive Plan, it is not recommended that the CWSP be adopted as a Water General Plan, pursuant to RCW 36.94, or itself as a Comprehensive Plan element. This is consistent with the finding that amendments should be carefully evaluated and the concern that without such evaluation, the resolution of identified quantity and quality problems may inadvertently produce spinoff effects, i.e. encourage unlimited and inappropriate development and generate land uses inconsistent with the Comprehensive Plan.

(e) Island County must prepare and adopt a Sewage Plan to provide leadership in the area of public sewage facilities consistent with the overall master plan for the County. This effort should take precedence over/be a prerequisite to the extension of the County's role into public utilities.

Furthermore, alternative solutions should be developed to protect groundwater from potential non-point pollution sources such as on-site sewage disposal systems, agricultural runoff, and storm water runoff.

(f) Land disposal and recycling of treated wastewater should be encouraged as a means of irrigating agricultural and forest lands. Furthermore, the utilization of water conservation techniques, including water conservation fixtures, drip irrigation, and grey water recycling, should be included in the design of residential communities.

6. OWNERSHIP OPTIONS

In the State of Washington, there are eight (8) public and seven (7) private ownership options for water systems. These options encompass a range of scales and complexity of operation, ease and initial cost of implementation, and ability to assess and finance. These options also vary in their eligibility for state and federal technical and management support and financing programs (see Table VII-1).

A. Counties - Pursuant to RCW 36.94.
B. Cities - Pursuant to RCW 35.
C. Water Districts - Pursuant to RCW 57.
D. Sewer Districts - Pursuant to RCW 56.20.
E. Public Utility Districts - Pursuant to RCW 54.16.
F. Port Districts (for industrial or commercial purposes) - Pursuant to RCW 53.08.
G. Fire Districts (for fire protection purposes) - Pursuant to RCW 52.20.
H. Irrigation Districts (for irrigation purposes) - Pursuant to RCW 87.

Private ownership options include:

- Corporations
- Cooperatives
- Companies
- Partnerships
- Individuals
- Individual Community Associates or Regional Water Associations
- Satellite System management in the form of the above

7. FINANCING

General obligation bonds, revenue bonds, special assessment bonds, and various financial assistance programs are commonly used to finance the construction of water system facilities. In the case of the rural areas in Island County, general obligation bonds do not seem appropriate. These bonds are a pledge against the property of an entire municipal corporation such as a city or county. Because proposed water system improvements to serve rural areas in Island County would only benefit small areas within the County, it would be difficult to gain support from the general population for issuance of general obligation bonds.

Revenue bonds are retired using water system revenues. The Cities of Oak Harbor and Langley, and the Town of Coupeville have used revenue bonds to pay for major water system improvements. It would be possible for these entities to issue revenue bonds to extend water service into the unincorporated areas, provided the cities receive the assurance that revenues from the new areas served would be sufficient to amortize the bonds.

The most likely method for financing water system improvements in unincorporated areas would be through the formation of improvement districts. The legal titles of the districts vary depending upon the sponsoring units of government. If formed by a city, it is called a local improvement district (LID). If formed by a public utility district, it is called a utility local utility district (ULUD). If formed by the County, it is called a local utility district (LUD). If formed by a water or sewer district, it is called a utility local improvement district (ULID).

Aquifer protection areas may be established, pursuant to RCW 36.36, for the purpose of financing the protection, preservation, and rehabilitation of underground water. Fees are collected, per household, for withdrawal of groundwater or for on-site sewage disposal. These fees may be used to fund the preparation of a comprehensive water and sewer plan, the construction of treatment plants and the construction of storm and/or surface water management facilities.

Sixteen (16) water/sewer districts currently exist in Island County (see Table II-1). Special assessment revenue bonds can be issued by these districts in order to finance water system improvements. These are revenue bonds which are also secured by the property value within the district. The debt service can be paid either from the system revenues or from the assessments against the property. Normally, a vote of the residents of the district is required at the time of formation and to authorize issuance of bonds.

Several grant and loan programs are available from the State and Federal government which can assist in the financing of capital improvements for water systems. These change periodically, but the following agencies generally have programs which may be applicable to water systems on Island County:

- The U.S. Farm Home Administration - this agency administers a program of loans and grants to rural water systems. Eligibility for grants is based on the level of water and sewer rates as compared with income levels. Loans are available at several interest rates, again, depending upon the medium income level in the area.

- U.S. Department of Housing and Urban Development - This agency administers a block grant program which provides grants for community development including water systems. There is generally a $500,000 ceiling on these grants which are made available on a competitive basis annually.

- Washington State Department of Health -This State agency administers a grant program to assist in the development of new water systems or in the improvement of existing water systems. The primary thrust of this grant program is to eliminate water quality problems and to ensure an adequate supply of safe water. At the present time, the DOH is administering funds made available under Referendum 38 and these funds are generally available on a 40 percent matching basis to eligible systems. The fact that Island County water purveyors are completing this CWSP improves opportunities for DOH grants.

  Table I-2, "The Drinking Water Programs Financing Matrix", identifies potential funding sources (agencies).

The financial plan selected for developing or improving water systems must be specific to the particular system. It should also reflect the policy that customers pay their fair share for the facilities necessary to provide service and/or conserve the available resource. Frequently, several different methods are combined in financing water system improvements.

- Major supply, pumping, transmission, and storage facilities are frequently paid for by the issuance of revenue bonds or special assessment revenue bonds. Ideally, the cost of the facilities should be spread over the area that can be served by the system. This should include not only the immediate customers of the system but parcels of land that can be served in the future. Assessments based on area or number of land parcels are appropriate. Sometimes a system development charge is calculated and assessed when customers are connected to the system.

- The distribution pipelines that are constructed to serve the individual properties are a more specific benefit to adjacent properties. It is customary to charge the costs of these improvements on a front- footage basis to the benefitted properties, although in some cases an area component is also included in these assessments.

- In addition to the major water system facilities and the distribution pipelines, there is a cost for the service connection and meter to the individual customer. This cost is generally assessed directly to the customer. Frequently, a utility maintains an established rate schedule for the various size service connections.

The above represents general concepts for financing water systems. It is often necessary to tailor improvement districts to the systems being constructed. It is not always possible to gain support from the owners of undeveloped land so these individuals may need to be excluded from the assessed district. All lots should support facility construction or improvements if hookups are available. Undeveloped lots pay lower fees.

8. PRIORITIES

The recommended priorities of the CWSP are as follows:

A. Public Education - Education can improve public awareness on a wide array of areas including individual and community conservation options and benefits, comprehensive land use planning, hazardous waste and other non-point pollution threats to groundwater and watershed management, and can encourage non-participating purveyors to join in coordination and conservation efforts.

B. Conservation - Water conservation activities improve the efficiency of use and reduce losses and waste of water, ultimately decreasing demand. Short-term conservation measures differ from long-term measures in terms of implementation time, degree of public cooperation, long-term effectiveness and influence on water supply planning. Long-term measures can serve as potential substitutes for new water supplies.

C. Technical and Financial Assistance Programs - Ineffective operation and management of small systems, including inadequate financing mechanisms was one of the key findings of the "Preliminary Assessment." County and State technical and financial support is needed to facilitate cost-effective improvements, model utility rates and financing based on revenue requirements, provide professional management, and promote water and energy conservation.

D. Shared Facilities Development - Although the lack of coordination between adjacent water utilities is an acknowledged problem, there has been inadequate involvement of the water purveyors to-date. Very few systems have actually participated by designating service areas or expanding service areas. The objectives of the CWSP can not be attained without an outreach program to inform and involve purveyors of all Classes in the CWSP process.

E. Groundwater - The coordination of a comprehensive groundwater management plan/program with the objectives of the CWSP is essential to not only protect the available groundwater resources of Island County, but to assure proper development of the resource. This may require the adoption of growth management policies consistent with the objectives of the Island County Comprehensive Land Use Plan.

F. Funding - New methods of funding education, conservation, assistance, and management programs should be sought. Without direct County involvement in facility ownership, funding sources available to purveyors are limited.

G. Future Planning - The CWSP must be seen as an initial planning effort and not a final document. An evaluation of the implementation program contained herein, and the possible increase in the County's role in water system operations and planning, must be included in the CWSP update required in 1995.

9. IMPLEMENTATION PLAN

A. Board of County Commissioners - Island County officially established a Public Works Department in 1973 pursuant to ICC 13.01 for the purposes of "establishing, operating, and maintaining systems of solid waste,

sewage, water, drainage, and other public services authorized by the Board." However, many of the provisions of ICC 13.01 have never been fully implemented. The BICC should, in public hearing, review the provisions of ICC 13.01 to consider possible revisions to facilitate more complete implementation. An expanded Public Works Department could assist with CWSP implementation.

B. Public Works - The Public Works Department may be tasked with the responsibility for developing and implementing all or part of the following:

(1) A public education program.

(2) A technical assistance program to water purveyors and RWAs.

(3) The satellite system management program including the prequalification process for satellite system managers.

(4) An outreach program to involve small water system purveyors and promote the development of RWAs and Satellite Systems within regional supply areas where additional sources of supply appear to be necessary.

(5) The preparation of Urban Business Center (UBC) amendments requiring water conserving plumbing fixtures for new and remodeled building.

(6) Subsequent management of the CWSP.

(7) Review/approval of Comprehensive Water District Plans pursuant to RCW 57.16.010 and required by the CWSP.

(8) Review/approval of service area agreements.

(9) Management/Administration of any construction bonds submitted as guarantee of conformance with the Minimum Design Standards for Water Works.

C. Planning Department - The Planning Department shall be responsible for the following:

(1) Development of the Island County GWMP.

(2) Proposing land use regulations that codify conservation policies of the Comprehensive Plan and CWSP.

(3) Review of individual water system plans.

D. Health Department - The Health Department shall be responsible for the following:

(1) Management of the USRP and monitoring the effectiveness of the process.

(2) Design approval for new and expanding water systems including well sites.

(3) Management of the Salt Water Intrusion Policy.

(4) Review/approval of Comprehensive Water District plans pursuant to RCW 57.16.010 and the CWSP.

(5) Support of the Public education program prepared/implemented by the Public Works Department.

(6) Review individual water system plans.

E. Fire Marshall - The Fire Marshall shall be responsible for the following:

(1) Review of fire flow proposals for compliance with design standards and fire code.

F. Budget and Revenues

(1) The possibility exists for the County to develop revenues from contract services provided to water systems. Grant funds should be sought out to promote water and energy conservation. Other revenues sources should be explored.

(2) A recommended budget for the Public Works Department, predicated on finding a source of revenue, is specified in Table VII-1.

G. Schedule

Table I-1 is a detailed schedule for implementation of the recommendations given above. Responsibilities for lead agency and support are also identified.

TABLE I-1

ISLAND COUNTY COORDINATED WATER SYSTEM PLAN
IMPLEMENTATION SCHEDULE

Program Elements	Responsibility (1) Lead	Responsibility (1) Support	1989	1990 Q1	1990 Q2	1990 Q3	1990 Q4	1991	After 1992
A. Plan Adoptions									
(1) WUCC Review and Approval	WUCC	ICPD	*						
(2) BICC Public Hearings	BICC	ICPD	*						
(3) Final Review and Approval by BICC	BICC	ICPD		*					
(4) Final Adoption; Chapter 70.116 RCW	DOH	BICC		*					
(5) Update and Review CWSP	BICC	WUCC							Every 5 yrs.
B. Water Purveyor Local Plans									
(1) Develop Final Criteria for Plan Approval	ICHD	ICPD/DOH	*						
(2) Establish Final Plan Review Process	ICPD	ICHD	*						
(3) Submit Draft Plans for Approval	PURV/ICPD	ICHD/DOH		*					
(4) Incorporate in CWSP	BICC	ICPD/ICHD		*					
(5) Update and Revise Individual Plans	PURV	ICPD/DOH							Every 5 yrs.
C. Service Areas									
(1) Identify Service Areas, Negotiate Agreements	PURV	ICHD/DOH	Continuing						
(2) Oversight and Recording of Maps, Agreements	ICPD	ICHD	Continuing						
(3) Incorporate in CWSP	BICC	ICPD	Continuing						
D. Utility Service Review Procedure									
(1) Integrate USRP in Land Use Approvals	ICHD	ICPD	Continuing						
(2) Appoint Water Utility Peer Review Committee	BICC	ICHD/ICPD			*				
E. Adoption of Design Standards Ordinance	BICC/ICED	ICHD/ICPD		*					
F. Water System Management Support Program									
(1) Adopt SSMA Prequalification Criteria	DOH	ICPW			*				
(2) Establish Public Works Department	BICC	ICED			*				
(3) Establish Technical Assistance Program for Regional Water Assn.	ICPW	DOH			*				
(4) Develop Policy for County Role in Infrastructure Improvements	BICC	ICPW			*				

TABLE I-1 continued

Program Elements	Responsibility (1) Lead	Responsibility (1) Support	1989	1990 Q1	1990 Q2	1990 Q3	1990 Q4	1991	After 1992
G. Regional Supply Systems									
(1) Develop Regioanl Supply Options for Whidbey and Camano Islands	ICPW	ICPD/DOH/ Ecology							*
(2) Incorporate Local Plans in Regional Plans	ICPW	PURV,RWAs SSMAs							*
H. Water Resources									
(1) Establish Land Development Ordinance for Source Availability	ICHD/ICPD	ICHD			*				
(2) Establish MOU with Ecology for Water Rights Approvals	ICHD	Ecology		*					
(3) Adopt a Ground Water Management Plan	Ecology/ ICPD/BICC	ICHD						*	
(4) Adopt a Conservation Program	BICC	ICPW			*				
I. WUCC Review of CWSP Implementation	WUCC	ICPD			Annual				

Footnotes:

(1) The following abbreviations are used to indicate designated responsibility:
- BICC - Board of Island County Commissioners
- DSHS - Department of Social and Health Services
- ICHD - Island County Health Department
- ICPC - Island County Planning Commission
- ICPD - Island County Planning Department
- PURV - Purveyors (individual)
- RWA - Regional Water Association
- WUCC - Water Utility Coordinating Committee
- Ecology - Department of Ecology

(2) Short-term schedule is identified by quarters (3 months) beginning at the time of WUCC approval of CWSP.

SECTION II

THE COORDINATED WATER SYSTEM PLAN PROCESS

1. INTRODUCTION

The Public Water System Coordination Act, Chapter 70.116 RCW, establishes a procedure for the State's water utilities to coordinate their planning and construction programs with those of adjacent water utilities and other local governmental activities. This Act specifies that the Department of Health (DOH) 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.

The State Legislature had previously 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 utilized 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 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 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 study area. The Island County CWSP has been prepared in accordance with requirements of both. It consists of a compilation of water system plans prepared by each expanding water utility, and this document, which is known as the Regional Supplement. Copies of applicable supporting regulations are provided in Appendix A.

2. PRELIMINARY ASSESSMENT

In an effort to address various issues and concerns related to water supply in Island County, a Preliminary Assessment of problems related to water supply and fire protection issues, water quality, and reliability of service was prepared for the water systems by Island County and DOH in January 1985. Several problems were identified in the Preliminary Assessment, many of which could be solved on an individual utility basis. There were, however, a number of problems the Preliminary Assessment identified as being most appropriately solved through implementation of the Coordination Act.

Based on the conclusions of the Preliminary Assessment, the Board of Island County Commissioners (BICC) declared the County a CWSSA, through Ordinance PD-85-07, on August 19, 1985.

By this action, the Public Water System Coordination Act was invoked. A Water Utility Coordinating Committee (WUCC) and Steering Committee were formed by Island County Ordinance PD-11-85, dated September 16, 1985. The WUCC was made up of representatives of purveyors with 50 or more service connections, as well as representatives from Island County, DOH, and other constituencies.

As its first action, the WUCC recommended the External Boundary of the CWSSA be extended to include all of Island County. The BICC formally adopted the External Boundaries on May 12, 1986.

3. CWSP PREPARATION

Preparation of the CWSP involved the joint efforts of participating local WUCC and Steering Committee members and County agency staff through approximately 2 years of monthly meetings. In addition, a design standards subcommittee met frequently to address facility design standards and specifications. Several special meetings were also held with County departments to establish or clarify policies.

The following areas received particular emphasis during preparation of the CWSP:

A. 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. The future service area boundaries were plotted on base maps to identify conflicting or unclaimed 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 the standard base maps. No known service area conflicts are unresolved.

B. Minimum Design Standards

This subject included a diverse list of considerations by the utilities, including: material specifications, construction practices, distribution facilities, metered services, fire flow requirements, etc. The contents and application of these standards were developed jointly through input of WUCC representatives and the County. Final standards are reviewed in Section VI. When adopted by the County, these will become the

minimum standards for all construction in new and expanding water systems. A water utility may adopt these standards by reference, or may adopt more stringent standards.

C. 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 future service areas and minimum design standards as a basis for assigning new applicants for development permits to water utilities. In undesignated areas, the procedure emphasizes adjacent utilities as the preferred service providers. The procedure for utility service review is outlined in Section VI.

D. Satellite System Management Agency (SSMA)

A program for providing satellite system services to existing and future water utilities was developed. These services would be provided by prequalified SSMAs receiving Island County approval. Specific prequalification criteria were developed which reflect Island County's need to ensure long-term competent water service to both current and future customers.

E. Regional Water Supply

The regional supply needs of Island County were evaluated for the future 10-, 25-, and 50-year planning periods. Forecasts of future water demand within the area were made based upon available population estimates and water use data. An estimate of the seasonal usage impact was included in the future demand forecast. Long-term water supply alternatives were considered, including conservation. The conclusion was reached that future supply requirements for most areas can be met from local groundwater. Section III presents an evaluation of conservation potential and Section VII presents alternatives for regional supply.

F. Water Rights

A thorough review of the status of existing water rights within the area was conducted with the intent of preparing an application for Water Rights Reservation. In March 1988, the Legislature passed Substitute Senate Bill No. 6724 which prohibits action on applications for water rights reservation until July 1, 1989. Therefore, the CWSP focused on an evaluation of existing rights and deficiencies in the current process of allocation.

G. Individual Water System Plans

The Public Water System Coordination Act states that each purveyor within the External Boundary shall be responsible for preparing a Water System Plan for the purveyor's future service area. An exception to this is

for non-municipally owned public water systems which 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.

The planning requirements are determined by DOH and vary for utilities based upon their size. These requirements are summarized in Exhibit II-1. All completed comprehensive water system plans of the individual utilities are incorporated herein to the CWSP by reference, as Appendix B and are kept on file at Island County Health Department (ICHD) and Island County Planning Department (ICPD).

Exhibit II-2 illustrates the procedure established for the review and approval of individual water system plans by the County and DOH. This procedure should be utilized for plans reviewed as a component of the CWSP effort. It is recommended as the method to be used for the future review of plans not yet submitted and for updates of all individual plans.

4. CURRENT STATUS

The Regional Supplement and some individual comprehensive water system plans are ready for adoption by the County as a CWSP. The submittal date for individual water system plans within 1 year of CWSP adoption. This is to enable smaller utilities an opportunity to incorporate the completed CWSP Regional Supplement into their plans.

WAC 248-56-800 enables DOH to approve portions of the CWSP found to be consistent with adopted plans and policies. As additional water system plans receive County and DOH approval, they may be administratively included within the adopted CWSP.

Table II-1 lists the Class 1 and 2 water utilities, municipal water utilities, and expanding Class 3 and 4 water utilities, which participated in the CWSP. Table II-1 also lists the level of their planning requirement. This Table provides a basic reference document for County administration agencies as they utilize the USRP. It will enable County staff to establish a utility's service area and their compliance with interlocal agreements.

As indicated on Table II-1, some utilities have not submitted their future service areas, service area agreements, or water system plans. The CWSP recommends that all expanding, municipal, or special district water utilities complete these documents and submit them to the Health Department no later than September 1, 1989. Unless a documented health-related improvement is involved, facility construction for new or expanding systems may not proceed without water plan review and approval by Island County and DOH. If a service area conflict arises, development activity should be denied within the contested service area, pending resolution. Due to the importance of tracking the status of these utilities, the

ICPD should be responsible for updating the master service area maps and Table II-1. The computerized data used to develop the base map and service areas have been provided to ICPD for this purpose.

Appendix B includes a list of water systems and their planning status in accordance with DOH requirements. Plan Content Guidelines are also described in Appendix B. It is provided as an Appendix so the County can continue to update the list as new systems become eligible and plans are approved. Likewise, Appendix F provides status of service area agreements. Section VI reviews policies applying to service area approvals.

5. RELATED STUDIES

During Preparation of the CWSP, several concurrent studies were integrated into the planning process. The following is a summary of these related studies and their relationship to the CWSP.

A. Zone of Influence Planning and Urban Business Center Planning

On December 18, 1984, the Board of Commissioners declared its intent that the County develop a planning component for areas near cities and towns (Zones of Influence), and areas near clustered mixed uses (Urban Business Centers). In order to address a strong desire of citizens to preserve the County's rural environment, zoning changes were needed to protect the rural areas by channeling growth to infilling of areas already exhibiting mixed use or small town qualities.

During the CWSP development, County and municipal staff developed proposed planning guidelines and participated in numerous public meetings. In these meetings, a wide divergence of opinion was encountered, and the eventual recommendation to the Board of Commissioners was found to be unacceptable. Currently, a new and more simplified approach is being pursued which will likely result in simplified sub-area plans for appropriate commercial core areas.

The service area policies of the CWSP, Section VI, include the requirement for purveyors to consider this special planning process as a criterion for future service area designation.

B. Groundwater Quality Monitoring

As a continuation of a 205j monitoring program, the Island County Health Department has maintained testing equipment and sampled various wells for evidence of contamination. Testing has principally been done at monitoring wells near landfill sites, but groundwater impacts near sludge utilization projects have also been evaluated.

This testing has been invaluable in providing assurance that activities potentially destructive to the limited groundwater resource for public water supply are being managed properly. The Ground Water Resource

Assessment of Appendix K indicates that shallow aquifer zones in some areas are potential future supplies. The data collected by these special water quality studies provides a baseline for future trend evaluation. In addition, the experience gained in sampling and testing provides a response capability to other contamination threats.

C. Drinking Water Program

During CWSP development, the Health Department continued its program of improving water supply service in Island County. The principal benefits of this program to the CWSP are the identification of unregistered water system and update of the water facilities inventories. The Health Department also files well logs for all wells drilled in the County. The Drinking Water Program is a prototype of some Satellite System Management services, as discussed in Section VI. Much of the Drinking Water Program activity is focused on the small water systems experiencing supply and/or management problems. This program, which is undertaken at a cost of over $50,000 per year to the County, is in addition to the normal functions of small water system design approval, water quality compliance, and well site evaluation.

D. Washington Water Utilities Council Database

The Washington Water Utilities Council (WWUC) is a committee of the Pacific Northwest Section of the American Water Works Association. The WWUC has, during the course of this CWSP development, prepared a database which provides a limited overview of the type of water resource information that is presently available, and under development, pertaining to public water supply needs. The information collected is a unique attempt to consolidate and combine data from numerous planning studies at a regional level.

The draft report, issued by the WWUC in February 1989, established that forecasting of water demand (and resource needs) requires a methodology on one of three levels: per capita requirement applied to population forecast, per capita requirements for different land use areas applied to overall population forecast, and sophisticated forecast based on econometric modeling. The demand forecast in this CWSP is a variation of the first methodology. Due to lack of metered systems in Island County, the other methodologies are not suitable.

TABLE II-1

ISLAND COUNTY CWSP
STATUS OF PARTICIPATING PURVEYORS

WFI	Purveyor	Service Area Mapped	Class	Service Area Agreement Filed	Plan Requirement	Date of Plan Approval
MAJOR SYSTEMS, EXPANDING OR NON-EXPANDING						
Cities						
155509	Town of Coupeville	X	1		AWSP	
45950W	City of Langley	X	1		AWSP	
62650C	City of Oak Harbor	X	1		WSP	
Districts						
04950P	Bayview Beach Water Dist.	X	2		Q	
107483	Camano Vista Water Dist.	?	2		Q	
13900C	Clinton Water Dist.	X	1		AWSP	
162562	Crockett Lake Water Dist.	X	1		AWSP	
264508	Freeland Water Dist.	X	1		AWSP	
338704	Holmes Harbor Water Co.	No Boundary	2	No	AWSP	
435508	Lagoon Point Water Dist.	X	1		AWSP	
45364E	Lakeview Terrace	No Boundary	2	No	AWSP	
46650K	Ledgewood Beach W.D.	X	2		Q	
480205	Long Beach Water Dist.	X	2		Q	
61603K	N. Whidbey Water Dist.	X	3	Yes	Q	
669501	Penn Cove Water Dist.	X	1		AWSP	
72150R	Rhodena Beach Water Dist.		2		Q	
	Saratoga Water Dist.	No		No		
76470X	Scatchet Head Water Dist.	X	1	3/10/88	AWSP	
96042Q	Swantown Water Dist.	X	2		Q	
Other Class 1 Systems						
00410R	Admiral's Cove, Inc.	X	1		AWSP	
10580Q	Camaloch Assn.	X	1		AWSP	
10600T	Camano Co-op Water & Power	X	1	1/12/88	AWSP	
SP130F	Camano Island State Park	X	1		-	
107507	Camano Water Assn.	X	1		AWSP	
37680C	Chateau St. Michelle		1		-	
16274J	Crosswoods Water Co.		1		AWSP	
20250L	Dugualla Community, Inc.	X	1		AWSP	
SP285T	Fort Ebey State Park	X	1		-	
SP2757	Fort Casey State Park	X	1		-	
33150P	Hillcrest Village Water Co.	X	1		AWSP	
499547	Madrona Beach Community Water System	X	1		AWSP	
034207	NAS Whidbey Island	X	1		WSP	
592000	New Utsalady Water System	X	1		Q	
61750E	Northgate Terrace	X	1		AWSP	

TABLE II-1 continued

WFI	Purveyor	Service Area Mapped	Class	Service Area Agreement Filed	Plan Requirement	Date of Plan Approval
662187	Parkwood Manor MHP		1		AWSP	
74000F	Rolling Hills Glencairn Community	X	1		AWSP	
76050W	Sandy Hook Yacht Club Est.	X	1	1/27/88	AWSP	
763000	Saratoga Water, Inc.		1		AWSP	
771486	Sea View Water Co.		1		AWSP	
789759	Sierra Country Club, Inc.	X	1		AWSP	
SP8204	S. Whidbey State Park		1		-	
466703	W. B. Waterworks #1	X	1		AWSP	
363146	Whidbey West Water System	X	1		AWSP	
OTHER WATER SYSTEMS, EXPANDING						
North Whidbey (Class 2)						
	Fircrest Water Assn.	X			Q	
	Harris Custer Estates Water Assn.	X		3/1/88	Q	
	Indian Ridge Water Co.	X			Q	
	Shirona Water System					
	Wildwood Water System					
North Whidbey (Class 3 and 4)						
	Cliff View Water Coop				Q	
	Strawberry Pt. Water Assn.	X			Q	
Central Whidbey (Class 3 and 4)						
	Fort Casey Inn	X			Q	
South Whidbey (Class 2)						
	Inglewood Park Water Sys.	X			Q	
	Skyline West Comm. Club	X			Q	
	Useless Bay Shores	X			Q	
	W&B Waterworks Nos. 2 & 3				Q	
	Windmill Heights Community	X		3/11/88	Q	
South Whidbey (Class 3 and 4)						
	Beverly Beach Division #3	X			Q	
	Groom, J.D.	X			Q	
Camano Island (Class 2)						
	Camano City Comm. Club	X			Q	

AWSP - Abbreviated Water System Plan
WSP - Water System Plan
Q - Planning Questionnaire

EXHIBIT II-1

DOH PLANNING REQUIREMENTS FOR WATER SYSTEMS

These guidelines are intended to serve as an outline for preparation of water system plans and to serve as partial criteria for approval of those plans by the Department of Health's district engineer.

The following purveyors are required by various State regulations to develop a Water System Plan and/or assist in the preparation of a Coordinated Water System Plan:

1. All water systems with more than 1,000 service connections (WAC 248-54-580, State Board of Health Water Supply Regulations).

2. All water systems within the external boundaries of a Critical Water Supply Service Area (CWSSA) (WAC 248-54-580, State Board of Health Water Supply Regulations, and WAC 248-56-700, Water System Coordination Regulations - see Footnote *).

3. All water systems within the geographical area established for reserving a future domestic water supply (WAC 173-590-070, Reservation of Public Water Supply Regulations).

If a water system plan is required by one of the above regulations, the contents of that plan will vary in detail according to the size of the public water system, consistent with the following:

1. Water System Plan - for those public water systems with over 1,000 service connections.

2. Abbreviated Water System Plan - for those public water systems serving between 100 and 1,000 service connections.

3. Water System Planning Questionnaire - for all remaining public water systems.

Supplementary Provisions are required in addition to the above plans for those water systems within the external boundaries of a CWSSA or within the geographical area established for reserving future domestic water supply. Supplemental provisions developed under the Water System Coordination Act are expected to be more detailed, emphasizing the relationship between water systems and oriented more towards system management than supplementary provisions for reservation of future supply. Supplementary provisions for reservation should concentrate on future water needs and source development.

The following chart is intended to help determine which plan contents should be followed for each of the regulations listed.

Plan Contents/ Plan Requirements	Water System Plan (1000 Services)	Abbreviated Water System Plan (100-1,000 Services)	Planning Questionnaire (Other Systems)	Supplementary Provisions for Water System Coordination Act	Supplementary Provisions for Reserving Public Water Supply
Board of Health Regulations (WAC 248-54-580)	X				
Water System Coordination Act (WAC 248-56-700)	X	X	X	X	
Reservation of Public Wtr. Supply (WAC 173-590-070)	X	X	X		X

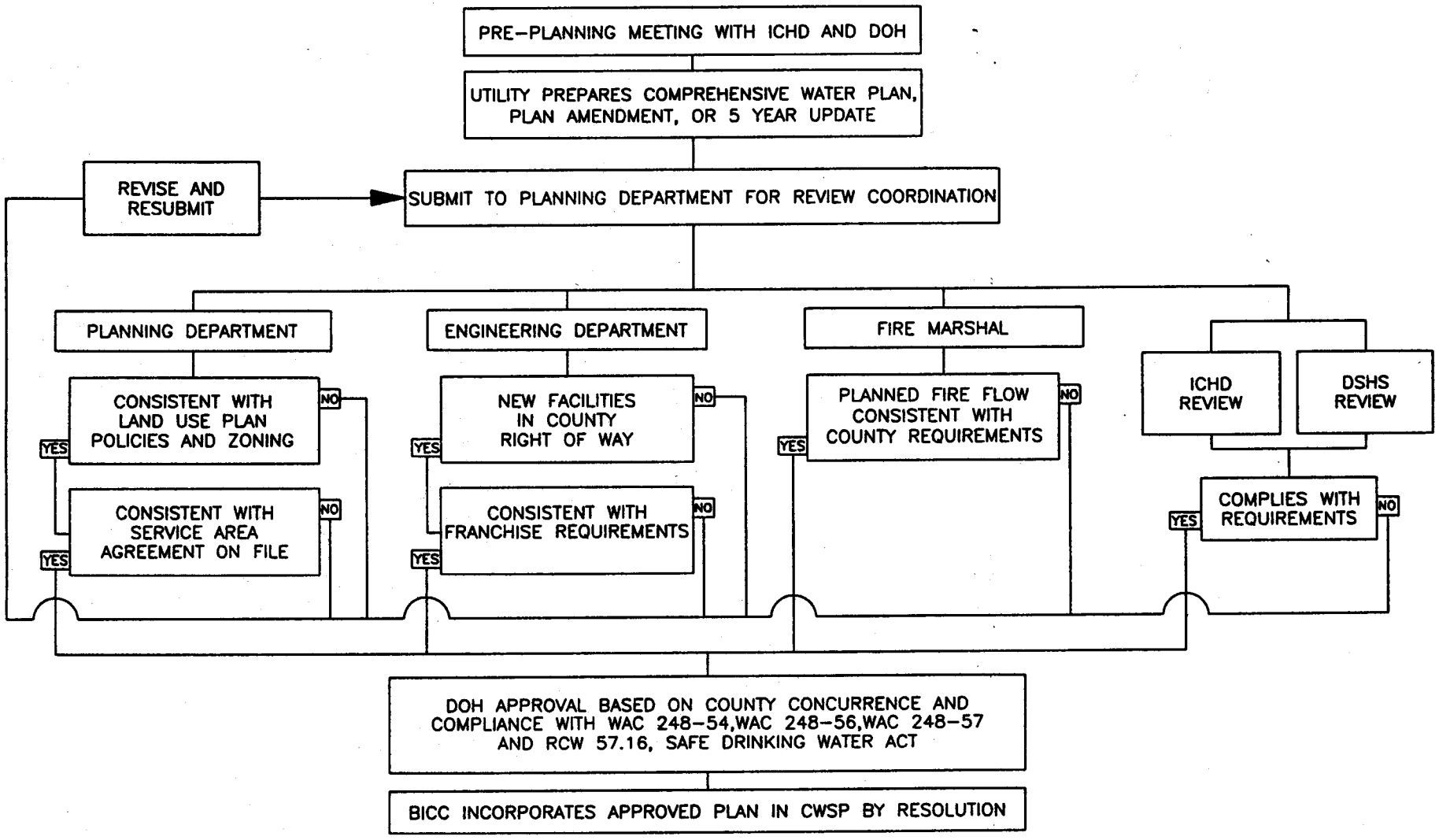
* Water systems in existence prior to September 21, 1977 are exempt from the planning requirements if they are:

1. Owner operated and serving less than 10 customers (or one industry).

2. Non-municipally owned and have no plans for expansion (provided they meet all applicable State Board of Health regulations).

Note: Plan content Guidelines are described in Appendix B.

EXHIBIT II-2
ISLAND COUNTY CWSP
REVIEW OF COMPREHENSIVE WATER SYSTEM PLANS



SECTION III

PLANNING DATA AND FUTURE WATER SUPPLY NEEDS

1. LOCATION AND PHYSICAL ENVIRONMENT

Island County is comprised almost entirely of two islands, Whidbey and Camano. They are situated near the northeast shore of Puget Sound between Everett and Anacortes, Washington. The largest of the islands is Whidbey and it is bounded on the west by Admiralty Inlet and the Straight of Juan de Fuca. Camano Island is situated between Whidbey Island and the mainland. Whidbey Island has a land area of approximately 172 square miles. Camano Island has a land area of approximately 40 square miles.

The Islands are principally the result of deposits from glacial advance and recession, although the northernmost part of Whidbey Island is bedrock. The surface relief of much of the County is very gradual, with elevations typically between 100 and 400 feet above sea level. A few small lakes exist. However, year-round streams are infrequent and there are no "rivers" in the County. Land cover is predominantly second growth forest, with a significant (approximately 20 percent) portion of total area used for agriculture. Soils at the surface are typically shallow and may be underlain with cemented gravel or till.

The climate of the County is dominated by fairly uniform marine air influence from a prevailing westerly or southwesterly direction. Due to the proximity of the Olympic mountain range in the same direction, Island County experiences a rain shadow effect, with annual rainfall usually below 40 inches. Rainfall tends to be greater in the southern portions of Whidbey Island. The climate and soil of Island County have proven to be ideal for some kinds of agriculture. The climate is also highly regarded for recreational uses, and occupancy increases significantly in the summer season.

Transportation to the Islands is facilitated by bridges to Camano Island at Stanwood, and to North Whidbey Island at Deception Pass. Ferry transportation routes are Clinton-Mukilteo and Keystone (South of Coupeville)-Port Townsend.

2. POPULATION AND ECONOMY

In 1987, the population of Island County was estimated to be 52,069. By comparison, the population in 1930 was only 5,369, an average growth rate of 4 percent. A period of especially rapid growth was experienced in the County in the 1970s, with an annual growth rate over 5 percent. The historic population

trend for Island County since 1900 is shown in Exhibit III-1. Later in this Section a projection of future water supply based on population trends is presented.

More than half of Island County's population resides on North Whidbey Island, in and near the City of Oak Harbor and the Whidbey Naval Air Station (NAS). The significance of the Naval Air Station to Island County's demography is implied by the fact that, between the 1970 and 1980 census year, 31 percent of the population moving to the County was from out of state. No other county in the state had a higher percentage (state average = 16 percent). The NAS Draft Master Plan Update in 1987 reports that military and federal civil service retirement income in the County in 1984 was $38 million, as compared to the total of all earnings by non-governmental industry of $81 million. These figures also indicate the potential impact of significant changes at the NAS on planning for future water supply needs.

The population of central Whidbey Island is concentrated near the business centers of Coupeville (the County seat) and Greenbank. This area of Whidbey Island also supports significant agricultural land use. Rate of population growth has been roughly the same as North Whidbey.

South Whidbey Island is primarily residential, with more seasonal dwelling units, but business centers are located at the City of Langley and communities of Freeland and Clinton. Approximately 19 percent of Whidbey Island's permanent population resides in South Whidbey. However, according to Planning Department estimates, approximately two-thirds of Whidbey's seasonal population impact is felt there. A significant factor in the South Whidbey economy is proximity to the metropolitan area near Everett via the Mukilteo Ferry.

Camano Island makes up approximately 12 percent of the County's total permanent population, although its population approximately doubles with seasonal population. The character of Camano Island is more pastoral than that of Whidbey. Most commercial activity occurs off-island in the Town of Stanwood.

In all areas of Island County the near-shore lands are preferred for residential development. The natural beauty of surrounding Puget Sound, the Cascade and Olympic mountain ranges, and the lands of Island County itself have attracted a steady growth in platted lands and dwellings over the last 20 years.

3. WATER DEMAND FORECAST

Planning for future water supply needs requires projection of demand for both short- and long-term periods. The short-term (10-year) projections are generally necessary to define needed capital improvements. Such improvements require lead time for financing, design, and construction. Longer term forecasts are needed to estimate resource requirements. Resource decisions inherently have

far-reaching implications. Any forecast of 50-year outlook is highly uncertain. However, in the absence of some quantification of future water supply requirement, essential resource planning decisions may not be addressed in a timely manner. A need for periodic review and update of long-range forecasts is recognized.

Water demand is a complex and dynamic variable. Each individual household or water user is a locus of a particular demand characteristic. At any given point of use, demand varies from zero to some peak value, which may be equal to the maximum capacity of the supply system. The sum of all point of use demand characteristics gives an overall pattern of demand which must be met, at least partially, by the public water system.

Some uses are relatively fixed in terms of quantity and time. An example might be domestic toilet or shower use. This component is fairly predictable, based on occupancy, typical fixtures, and normal expected use pattern. Other uses may be variable. Irrigation use, for example, is highly dependent on season, crop and climate. Commercial and industrial demand may follow various patterns, based on the type of use. A plant nursery, for instance, probably requires more total water resource than a wood-working shop, although the latter may some day require a great deal of water in a short time for fire control.

Public water systems normally plan for water supply needs based on customer growth. It is crucial to the public water system that enough supply be developed to assure a high degree of service reliability. Therefore, water systems normally attempt to be somewhat conservative in planning expected needs.

To determine the future needs, a reasonable assessment must be made of the number and type of customers expected to be served. This projection must extend as far as practical to determine the quantity requirements for source development. The water system manager will attempt to anticipate the appropriate need and match it to the local knowledge of resource availability. The need is usually predicted by selecting a nominal value representing average daily and peak use per customer for the expected customer mix. Essentially, this same approach is utilized by the Department of Ecology (Ecology) in allocating quantities for a water right permit.

In the Coordinated Water System Plan (CWSP), the forecast of water demand is at a larger scale than normally used for a water right or system evaluation. Since the quantities are significantly larger, it is desirable to use as precise as possible a forecast, to minimize implications for other uses of the water resource. The most sophisticated techniques of econometric modeling provide a greater level of precision, and also allow indexing of forecasted demand to other factors which can be measured in future years.

An econometric forecast, however, is not possible for Island County now due to a lack of the detailed data required, and the significant cost of such a forecast. Instead, a forecast was prepared using population projections by the Office of Financial Management of Washington (OFM), and Island County Planning Department (ICPD). The forecasted population was converted to water demand using an estimate of water need on a per capita basis. This approach is adequate for the purpose of the CWSP, but should be verified and revised based on a more complete data base, and possibly an econometric forecast, at a later date. In any event, the projections of the CWSP will need to be revised at the time of the 5-year update.

Island County is rural to transitional, with minimal industrial water use. In similar study areas in the Northwest, daily per capita demand of between 80-120 gallons is typical. Information collected from Class 1 water systems during preparation of the CWSP indicated an average water demand of about 90 gallons per capita per day. This factor is based upon the total volume of water delivered by water systems and the permanent population served. However, the total water delivered includes some service to commercial, institutional, and other non-population uses, as well as typical lawn irrigation use. These other uses are usually much less than domestic use except in highly urbanized areas. Individual homes served by a single well are expected to have essentially the same demand for water, except where significant irrigation use is also involved. Agricultural, mining, and other non-domestic uses are not included because they are not directly related to population. A factor of 100 gallons per capita per day was chosen to use, with projected population, to estimate long-range future water demand and resource requirement for Island County. This value is an estimate of average daily use. Peak use is estimated as 250 gallons per capita per day.

Exhibit III-1 and Table III-1 show population projections, through the year 2000, published by OFM, in 1986 Population Trends for Washington State, and by ICPD. The long-range projection of seasonal population impact must consider that with overall growth occurring there will be some conversion of seasonal to permanent residences. Also, urbanizing areas will see much higher rates.

The OFM is responsible for projecting population in areas of the State for the purpose of revenue forecasting. Such forecasts tend to be conservative so as not to over-estimate revenues. The ICPD estimate is for planning of needed public services and land use management. Ordinarily these forecasts tend to be liberal so as to identify problems soon enough to provide solutions. Both forecasts extend through the year 2000. Inspection of Exhibit III-1 suggests that both are generally consistent with the long-term historical growth of population.

The typical population growth curve is shaped as an elongated "S", with a "steep" region of nearly linear growth followed by a period of declining growth rate (Water Supply and Pollution Control; Clark, J.W., et.al.; 2nd ed., 1971; International Textbook Company; p. 96). This growth rate decline is attributed to the population approaching a maximum capacity. Island County's growth appears to be in a portion of the typical curve which is represented by approximately linear behavior.

In Exhibit III-1 and Table III-1, both projections are extended to the year 2040 using a straight line extrapolation. The Environmental Impact Statement (EIS) for Island County's Comprehensive Plan estimates the County's peak population holding capacity (which would include seasonally occupied dwellings), based on the optimal land use pattern and permitted density, as 184,000. This is an approximate figure and does not account for many factors which are able to limit or expand growth, such as changes in regional economic conditions, environmental and social costs added to development, revised County growth policies, etc.

A forecast of seasonal population was prepared using an adaptation of data and methodology by the ICPD. In the Comprehensive Plan EIS, and later in Population Trends in Island County, furnished by ICPD, an estimate of seasonal population is provided. This estimate is based on a special census of seasonal housing in 1977. Adjusting for the 1980 census populations, a seasonal increase of 11,200 persons is estimated. By comparison, the reported "unoccupied" dwellings in the 1980 census (January 31), if occupied by an average of 2.5 persons, would estimate a seasonal population of 7,410. The census figure does not include transitory dwelling units such as hotel rooms, and unoccupied mobile home or trailer sites, and other transitory units. The 1987 Annual Membership Report of the Island County Economic Development Council identifies approximately 420 hotel/motel rooms in Island County. Thus, the ICPD figures appear to be reasonable if all levels of seasonal population impacts are considered.

Peak resident population forecasted by the OFM extrapolation to year 2040, including seasonal, is 170,100. Using the ICPD extrapolation, an estimate of 201,340 is obtained. These figures are both near the Comprehensive Plan estimate of holding capacity.

It is not possible, given available information, to select the most probable long-term growth forecast from the above alternatives. However, recent OFM population estimates (1987 Population Trends for Washington State, F87-08) give Island County's 1987 population as 52,100, which is approximately in line with the OFM projections. Both projections are used for water demand evaluation. The ICPD forecast should be considered a high growth scenario, while the OFM forecast is a moderate growth scenario.

Table III-2 shows the average daily demand projection for Island County, and for the four sub-areas, estimated through the year 2040. Peak day projections, based on the same population data, and using a demand factor of 250 gallons per capita per day, are shown in Table III-3. Additional data is also provided in Appendix C.

It is possible, and even likely, that the demand patterns for a given area will change with time. Two important factors are increased urbanization and the impact of conservation. Urbanization will tend to increase a per capita use rate and conservation will cause decrease. Both of those influences have practical limits to the quantitative impact that may be felt.

In Island County, conservation must be considered an immediate priority because of the limitation of resource and the cost of alternative supplies. However, since most of Island County's water supplies are not metered it would be difficult to monitor the effectiveness of a conservation program. In areas where aggressive conservation has been applied, demand reductions of up to 10 percent have been realized by retrofitting alone. The expected effect of conservation on water demand growth is to decrease the rate of growth of all new demand by an amount corresponding to the conservation effectiveness. If conservation is also applied to existing demand, the growth of total demand will be reduced further, and total demand could even experience a decline. However, this effect would be shorter term, lasting only until conservation effects had been maximized among current water users.

A summary of the projected long-term water supply requirements, therefore, for domestic use in Island County is as follows:

PROJECTED DOMESTIC WATER SUPPLY REQUIREMENT IN THE YEAR 2040 (1)(6)

	Moderate Growth Demand (2)		High Growth Demand (3)	
	Average Daily	Peak Daily	Average Daily	Peak Daily
Camano	1.9	6.5	2.6	8.2
North Whidbey (4)(5)	7.2	18.3	9.6	24.1
Central Whidbey (4)	1.9	5.6	2.6	7.4
South Whidbey (4)	2.7	8.5	3.5	10.6
Total Whidbey	11.8	32.4	15.7	42.1
Total County	13.7	38.9	18.3	50.3

(1) Supply requirement given in MGD, includes current demand. One MGD is approximately equivalent to 700 gpm or 1,120 acre-feet per year.
(2) Based on population projection by OFM.
(3) Population projection by ICPD.
(4) Whidbey Island divided into three subareas according to census division.
(5) Total supply requirement including that which is met by the Oak Harbor pipeline. Pipeline capacity is approximately 10 MGD. Projected average daily flow for the existing pipeline in year 2010 is 5.3 MGD, based on Oak Harbor estimates.
(6) Projections do not include agriculture, mining, and other non-domestic water supply uses. Projections also do not include the possible impact of an effective conservation program.

Based on current estimated demand (1985), the additional water supply needed in the next 10, 25, and 50 years is as follows:

ESTIMATED ADDITIONAL WATER SUPPLY NEEDED
(Average Daily Demand) (1)

	Estimated Current Demand	Additional Supply Needed Above Current					
		Year 2000		Year 2015		Year 2040	
		Mod.	High	Mod.	High	Mod.	High
Camano	0.8	0.3	0.5	0.6	1.0	1.1	1.8
North Whidbey	2.9	1.2	1.8	2.4	3.6	4.3	6.7
Central Whidbey	0.8	0.3	0.5	0.7	1.1	1.1	1.8
South Whidbey	1.0	0.5	0.7	0.9	1.4	1.7	2.5
Total Whidbey	4.7	2.0	3.0	4.0	6.1	7.1	11.0
Total County	5.5	2.3	3.5	4.6	7.1	8.2	12.8

(1) See Footnote (6) from previous table.

Using the water supply requirements forecasted for the High Growth case, a total demand reduction resulting from a 10 percent conservation effectiveness represents up to 1.8 MGD through the year 2040. This is approximately 14 percent of the high forecast of future supply requirement. In the short-term, however, the resource amount represented by the conservation option will be substantially less. Nevertheless, the intrinsic conservation potential in existing uses (approximately 0.6 MGD if 10 percent conservation is assumed) should be considered an important short-term option to increase water resource availability and defer the more costly and difficult supply alternatives.

TABLE III-1

ISLAND COUNTY POPULATION PROJECTIONS

Projection	1980	1985	1990	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040
MODERATE GROWTH													
OFM Projection (1)													
Camano Island	5,080	5,674	6,569	7,349	8,129	8,909	9,689	10,469	11,249	12,029	12,809	13,589	14,369
North Whidbey	25,535	28,522	33,021	36,941	40,860	44,780	48,699	52,619	56,538	60,458	64,377	68,297	72,216
Central Whidbey	6,144	6,863	7,945	8,888	9,831	10,774	11,717	12,660	13,603	14,546	15,489	16,432	17,375
South Whidbey	7,289	8,142	9,426	10,545	11,663	12,781	13,899	15,017	16,135	17,253	18,371	19,489	20,607
Whidbey Island	38,968	43,527	50,392	56,374	62,354	68,335	74,315	80,296	86,276	92,257	98,237	104,218	110,198
ISLAND COUNTY	44,048	49,201	56,961	63,723	70,483	77,244	84,004	90,765	97,525	104,286	111,046	117,807	124,567
HIGH GROWTH													
ICPD Projection (2)													
Camano Island	5,100	6,300	7,600	8,950	10,300	11,650	13,000	14,350	15,700	17,050	18,400	19,750	21,100
North Whidbey	25,500	29,100	35,000	41,050	47,100	53,150	59,200	65,250	71,300	77,350	83,400	89,450	95,500
Central Whidbey	6,100	7,400	8,900	10,450	12,000	13,550	15,100	16,650	18,200	19,750	21,300	22,850	24,400
South Whidbey	7,300	8,800	10,600	12,450	14,300	16,150	18,000	19,850	21,700	23,550	25,400	27,250	29,100
Whidbey Island	38,900	45,300	54,500	63,950	73,400	82,850	92,300	101,750	111,200	120,650	130,100	139,550	149,000
ISLAND COUNTY	44,000	51,600	62,100	72,900	83,700	94,500	105,300	116,100	126,900	137,700	148,500	159,300	170,100
ICPD Seasonal Projection (3)													
Camano Island	4,500	5,080	5,700	6,300	6,900	7,500	8,100	8,700	9,300	9,900	10,500	11,100	11,700
North Whidbey	300	340	380	440	500	560	620	680	740	800	860	920	980
Central Whidbey	2,200	2,480	2,780	3,040	3,300	3,560	3,820	4,080	4,340	4,600	4,860	5,120	5,380
South Whidbey	4,200	4,750	5,330	6,115	6,900	7,685	8,470	9,255	10,040	10,825	11,610	12,395	13,180
Whidbey Island	6,700	7,570	8,490	9,595	10,700	11,805	12,910	14,015	15,120	16,225	17,330	18,435	19,540
ISLAND COUNTY	11,200	12,650	14,190	15,895	17,600	19,305	21,010	22,715	24,420	26,125	27,830	29,535	31,240
TOTAL POPULATION													
MODERATE GROWTH	55,248	61,851	71,151	79,618	88,083	96,549	105,014	113,480	121,945	130,411	138,876	147,342	155,807
HIGH GROWTH	55,200	64,250	76,290	88,795	101,300	113,805	126,310	138,815	151,320	163,825	176,330	188,835	201,340

TABLE III-1 continued

Footnotes:

(1) Washington State Office of Financial Management - Resident Population, 1984 Forecast.

(2) Island County Planning Department - Resident Population.

(3) Using data collected by ICPD in the Environmental Impact Statement for the Island County Comprehensive Plan, which projects seasonal population from 1980-2000. Beyond 2000, a constant increase is assumed.

TABLE III-2

ISLAND COUNTY PUBLIC WATER SUPPLY DEMAND PROJECTIONS
AVERAGE DAILY DEMAND (MGD)(1)

Projection	1980	1985	1990	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040
MODERATE GROWTH													
OFM PROJECTION (2)													
Camano Island	0.5	0.6	0.7	0.7	0.8	0.9	1.0	1.0	1.1	1.2	1.3	1.4	1.4
North Whidbey	2.6	2.9	3.3	3.7	4.1	4.5	4.9	5.3	5.7	6.0	6.4	6.8	7.2
Central Whidbey	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.5	1.6	1.7
South Whidbey	0.7	0.8	0.9	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.1
Whidbey Island	3.9	4.4	5.0	5.7	6.3	6.9	7.5	8.1	8.7	9.2	9.7	10.3	11.0
ISLAND COUNTY	4.4	5.0	5.7	6.4	7.1	7.8	8.5	9.1	9.8	10.4	11.0	11.7	12.4
HIGH GROWTH													
ICPD PROJECTION (3)													
Camano Island	0.5	0.6	0.8	0.9	1.0	1.2	1.3	1.4	1.6	1.7	1.8	2.0	2.1
North Whidbey	2.6	2.9	3.5	4.1	4.7	5.3	5.9	6.5	7.1	7.7	8.3	8.9	9.6
Central Whidbey	0.6	0.7	0.9	1.0	1.2	1.4	1.5	1.7	1.8	2.0	2.1	2.3	2.4
South Whidbey	0.7	0.9	1.1	1.2	1.4	1.6	1.8	2.0	2.2	2.4	2.5	2.7	2.9
Whidbey Island	3.9	4.5	5.5	6.3	7.3	8.3	9.2	10.2	11.1	12.1	12.9	13.9	14.9
ISLAND COUNTY	4.4	5.1	6.3	7.2	8.3	9.5	10.5	11.6	12.7	13.8	14.7	15.9	17.0
ICPD SEASONAL PROJECTION (3)													
Camano Island	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.5	0.5	0.5
North Whidbey	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Central Whidbey	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
South Whidbey	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.5	0.5	0.5	0.6
Whidbey Island	0.3	0.3	0.3	0.4	0.4	0.5	0.6	0.6	0.7	0.7	0.8	0.8	0.8
ISLAND COUNTY	0.5	0.5	0.6	0.7	0.8	0.8	1.0	1.0	1.0	1.1	1.2	1.2	1.3
TOTAL DEMAND (MGD)													
MODERATE GROWTH	4.9	5.5	6.3	7.1	7.8	8.6	9.4	10.1	10.8	11.6	12.3	13.1	13.8
HIGH GROWTH	4.9	5.6	6.8	8.0	9.1	10.3	11.5	12.6	13.7	14.9	16.1	17.2	18.3

TABLE III-2 continued

Footnotes:

(1) Projections do not include agriculture, mining, and other non-domestic water supply uses. Also, projections do not include demand reduction which may result from increased conservation of water use.

(2) Washington State Office of Financial Management. See Table III-1.

(3) Island County Planning Department. See Table III-1.

(4) Using data collected by ICPD in the Environmental Impact Statement for the Island County Comprehensive Plan, which projects seasonal population from 1980-2000. Beyond 2000, a constant increase is assumed.

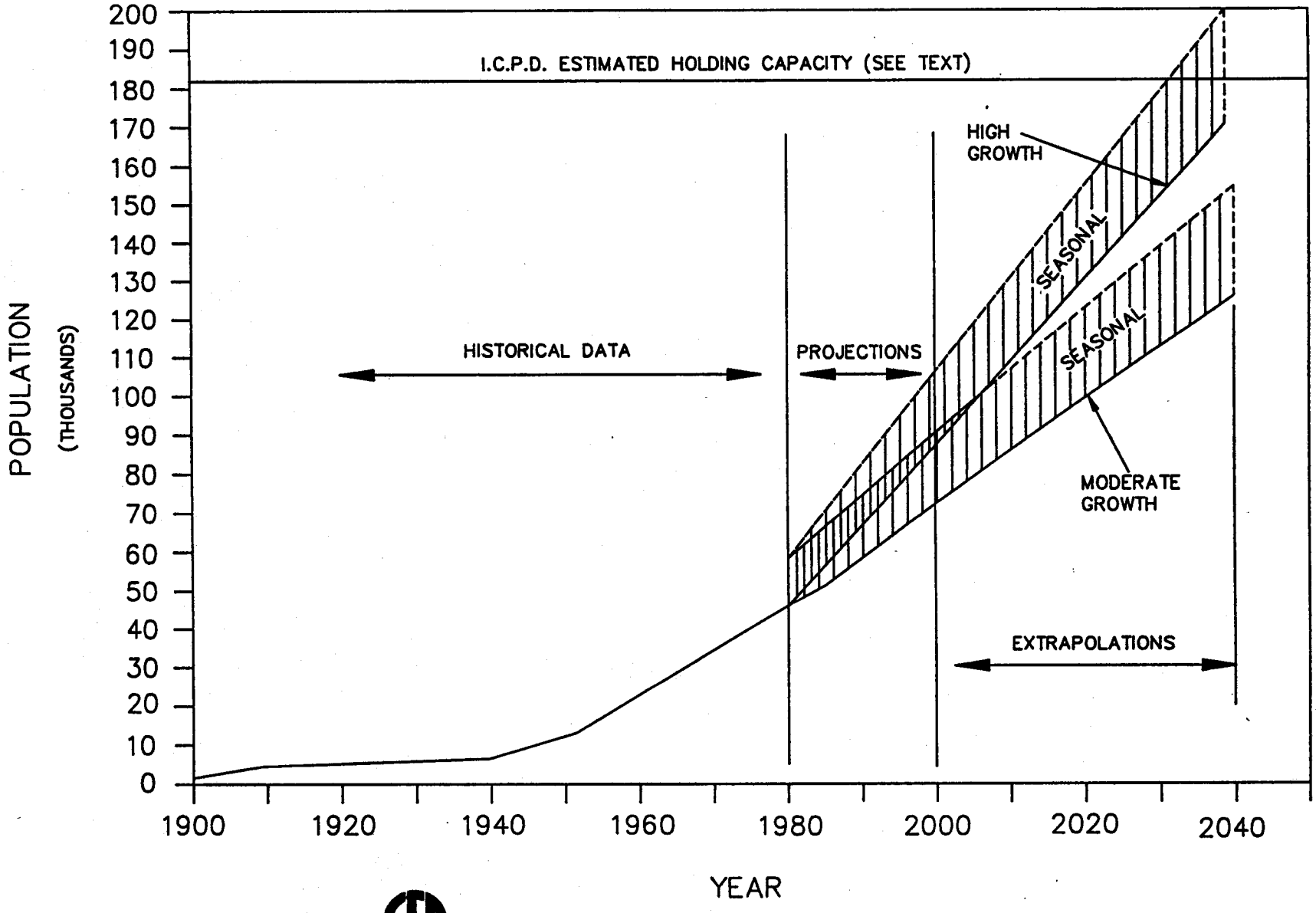
TABLE III-3
ISLAND COUNTY WATER DEMAND PROJECTIONS
PEAK DAY DEMAND (MGD)(1)

Projection Area	1980	1985	1990	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040
MODERATE GROWTH													
OFM Projection (2)													
Camano Island	1.3	1.4	1.6	1.8	2.0	2.2	2.4	2.6	2.8	3.0	3.2	3.4	3.6
North Whidbey	6.4	7.1	8.3	9.2	10.2	11.2	12.2	13.2	14.1	15.1	16.1	17.1	18.1
Central Whidbey	1.5	1.7	2.0	2.2	2.5	2.7	2.9	3.2	3.4	3.6	3.9	4.1	4.3
South Whidbey	1.8	2.0	2.4	2.6	2.9	3.2	3.5	3.8	4.0	4.3	4.6	4.9	5.2
Whidbey Island	9.7	10.8	12.7	14.0	15.6	17.1	18.6	20.2	21.5	23.0	24.6	26.1	27.6
ISLAND COUNTY	11.0	12.2	14.3	15.8	17.6	19.3	21.0	22.8	24.3	26.0	27.8	29.5	31.2
HIGH GROWTH													
ICPD Projection (3)													
Camano Island	1.3	1.6	1.9	2.2	2.6	2.9	3.3	3.6	3.9	4.3	4.6	4.9	5.3
North Whidbey	6.4	7.3	8.8	10.3	11.8	13.3	14.8	16.3	17.8	19.3	20.9	22.4	23.9
Central Whidbey	1.5	1.9	2.2	2.6	3.0	3.4	3.8	4.2	4.6	4.9	5.3	5.7	6.1
South Whidbey	1.8	2.2	2.7	3.1	3.6	4.0	4.5	5.0	5.4	5.9	6.4	6.8	7.3
Whidbey Island	9.7	11.4	13.7	16.0	18.4	20.7	23.1	25.5	27.8	30.1	32.6	34.9	37.3
ISLAND COUNTY	11.0	13.0	15.6	18.2	21.0	23.6	26.4	29.1	31.7	34.4	37.2	39.8	42.6
ICPD Seasonal Projection													
Camano Island	1.1	1.3	1.4	1.6	1.7	1.9	2.0	2.2	2.3	2.5	2.6	2.8	2.9
North Whidbey	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Central Whidbey	0.5	0.6	0.7	0.8	0.8	0.9	1.0	1.0	1.1	1.2	1.2	1.3	1.3
South Whidbey	1.1	1.2	1.3	1.5	1.7	1.9	2.1	2.3	2.5	2.7	2.9	3.1	3.3
Whidbey Island	1.7	1.9	2.1	2.3	2.6	2.9	3.3	3.5	3.8	4.1	4.3	4.6	4.8
ISLAND COUNTY	2.8	3.2	3.5	3.9	4.3	4.8	5.3	5.7	6.1	6.6	6.9	7.4	7.8
TOTAL DEMAND (MGD)													
MODERATE GROWTH	13.8	15.4	17.8	19.7	21.9	24.1	26.3	28.5	30.4	32.6	34.7	36.9	39.0
HIGH GROWTH	13.8	16.2	19.1	22.1	25.3	28.4	31.7	34.8	37.8	41.0	44.1	47.2	50.4

(1) See Footnote (1) on previous table.
(2) Washington State Office of Financial Management.
(3) Island County Planning Department.

EXHIBIT III–1

ISLAND COUNTY POPULATION TRENDS



SECTION IV

ASSESSMENT OF EXISTING WATER SUPPLY SYSTEMS

1. INTRODUCTION

In 1985, the Island County Health Department (ICHD) prepared a detailed Preliminary Assessment of Water System Issues in Island County prior to declaring the County a Critical Water Supply Service Area (CWSSA) and beginning the coordinated planning process. Table IV-1 is taken from the preliminary assessment. It is included to "highlight" the large number of water systems in the County and the degree to which these systems fail to meet current regulations and standards. (Note: the subareas referred to in Table IV-1 are not in precisely the same locations as those given in Section III. This discrepancy does not materially affect any of the conclusions herein.)

This section summarizes the findings of the Preliminary Assessment. It also presents a further evaluation of Class 1 systems (100 or more service connections) conducted as a first step in the planning process.

Information was obtained from various sources, including the Department of Health (DOH), the Department of Ecology (Ecology) and the ICHD. Individuals responsible for the existing water systems were contacted by mail to collect information on service, future plans, usage history, system facilities, and various other items. In addition, key personnel for Class 1 water systems were interviewed. This was done to become familiar with the water system, to verify existing information, and to obtain information not available from other sources. When available, engineering reports, plans and specifications, water system plans, and other information were reviewed.

2. WATER SYSTEM INVENTORY

The Class 1 water systems within Island County were studied using the sources of information listed above. Information collected on system operations, the capabilities of existing facilities, and the planning status of these systems is tabulated in Appendix D. The following is a discussion of information provided in Appendix D.

A. Approved Comprehensive Water System Plan

The year when the most recent Comprehensive Water System was approved by DOH is provided in the Appendix. Chapter 248-54 WAC requires any system with one thousand or more services to prepare and to obtain approval of a water system plan from DOH. Currently, only one

water system in Island County, Oak Harbor, falls into this category. Oak Harbor has an approved water system plan and recently updated its plan. Chapter 248-54 WAC also requires that approved water system plans be updated at least every 5 years, or sooner, if required by DOH.

Coupeville, the City of Langley, and the Clinton Water District (CWD) are currently in the process of updating their water system plans. Coupeville has filed revisions to its water plan. A few systems, such as the Camano Water Association, have prepared water system plans for their own benefit, but have not submitted them to DOH for approval. Some of the remaining systems expressing interest in expansion need to prepare a water system plan or to update their plans in order to be in compliance with DOH planning requirements.

Most of the small Class 1 water systems have indicated they have no interest in future expansion. Therefore, although a water system plan would be beneficial, there is no requirement that it be prepared.

B. Service Information

Appendix D includes information on the number of services or connections to a system, an estimate of the respective population served, and the potential services if the system's service area were fully developed. When possible, the number of seasonal and full-time connections are shown as estimated by the person interviewed.

The column "Potential Services" contains several types of information. In some instances, the system serves a platted subdivision(s) and the total number of platted lots is shown as the future growth potential. Where information on source capacity is available, the number of connections that can be served by the source using the criterion of 800 gallons/day of supply per connection (DOH "Sizing Guidelines") is estimated. Caution is suggested in using this potential number of connections because the current capacity of the well source(s) may be different than shown. The ability to actually deliver water also depends upon the capacity of the distribution system, storage, and other factors.

C. System Facilities

Appendix D lists information collected on the source of supply, the capacity of these sources, the storage facilities, and the typical distribution pipeline sizes. Provisions to supply water for fire flow are also indicated. This does not necessarily mean that County fire flow standards (minimum of 500 gpm for 30 minutes) are met. Rather, it is an indication as to whether there are minimum 6-inch-diameter pipelines with source

and/or storage capability to provide a degree of fire protection. Hydrants and/or standpipes are provided, but may not give full coverage of the service area. See the comment column for additional information.

D. Certified Operator

All Class 1 water systems are required to have at least one certified operator. Some systems, depending on size, may be required to have more than one. In some cases, DOH has issued a temporary certification. This allows the system 1 year to train or hire a certified operator. Most of the Class 1 systems have certified operators or temporary certification.

E. Water Quality

Water quality is a problem for many of the water systems. Many systems regularly have water samples with iron and manganese concentrations in excess of the Maximum Contaminant Level (MCL) set forth in the State/U.S. Environmental Protection Agency (EPA) drinking water standards. Various techniques can be employed to reduce concentration of these minerals. Rolling Hills/Glenncairn uses an aeration process. Penn Cove Water District uses large quantities of water softening salts. Some groundwater sources are chlorinated for disinfection. The majority of the groundwater supplies, however, do not have any treatment.

Salt water intrusion is a problem facing many water systems. In some areas of Island County, such as Central Whidbey Island and southern and northeastern Camano Island, the occurrence of salt water intrusion is a serious risk for both existing supplies and future groundwater development. Other areas have historically provided groundwater development with relatively low incidence of salt water intrusion.

A number of comprehensive studies, especially by the U.S. Geological Survey (USGS), have explored the native conditions and withdrawal factors which are conducive to salt water intrusion. Although these studies have provided a greater understanding of the problem, it is still difficult to predict the risk of salt water intrusion for any given well.

Each purveyor is required to regularly monitor both sodium and chloride, plus conductivity, in water supplies. Any observed increasing trend in these components is indicative of salt water intrusion. In addition, each new groundwater source must be evaluated for risk of salt water intrusion.

Appendix K, Groundwater Resource Evaluation, presents a detailed discussion of salt water intrusion incidents in Island County.

F. Future Expansion

A discussion of the process of service area designation for future expansion is given in Section VI. As previously mentioned, few water systems in Island County have expressed intentions to expand. Many of the systems were developed to serve platted subdivisions and some of these systems anticipate considerable growth within their service areas. A few systems are actively planning to extend service as it becomes economically feasible. In some instances, these future service areas will envelop other systems.

G. Comments

Comments containing additional information on the systems and their operation are included in Appendix D. This information was gathered during visits to the systems and from other interviews and background information. Some generalizations can be made about the system operations and future expansion which are particularly relevant to their participation in the Coordinated Water System Plan (CWSP).

A concern for management of the water systems in the future was a recurring comment in the correspondence and in the interviews. Most systems are operated by residents of the respective communities, often on a volunteer basis. Many of these volunteers were also involved in the installation of the systems. Finding qualified help is becoming increasingly difficult. Additionally, many of the operators are retired and their ability or desire to continue working is not long-term.

The feelings about service area expansion relate back to management and also to protection of the source of supply, the aquifer. The systems contacted are "managing" at the current water use levels. It is a perception that if the service area and demand are expanded, depletion of the aquifer or saltwater intrusion might jeopardize the supply to the existing customers. There is also concern about being forced to expand or relinquish control of the system. Water rates are currently low and use of water is typically unrestricted. For some, resistance to expanding the water system is expressed in terms of resistance to any growth which may detract from the quality of life.

The systems that did anticipate future expansion usually made several assumptions. If the new expansion was for a development, the burden of cost would be on the developer and the new facilities would be built to the current standards of the system. The existing customers would not bear the cost. The person or developer financing the expansion would usually be entitled to collect latecomer fees. In this way, future customers served by the improvement would reimburse the developer that paid the

original cost of the improvement a prorata share of this cost. If the expansion encompassed an existing system, the system being taken over would finance any improvements required to bring the system up to the standards of the parent system.

The majority of systems contacted would be able to accommodate only limited expansion. Usually, systems serving platted subdivisions would not be able to provide adequate service if the remaining lots in the development were built upon. This is based on current supply and storage capabilities. Many of the systems face major system rehabilitation before considering expansion.

H. Water Rights

All sources providing a total of more than 5,000 gallons/day of water are required to apply to Ecology to obtain a water right.

Ecology records for Island County were reviewed in an effort to determine the water rights of the existing systems. The quantities of current water rights for the Class 1 systems that could be identified are summarized in Appendix D. The table also shows the status of the rights, i.e., application, or if a permit or certificate has been issued. The total annual volume that may be withdrawn has been converted from acre-feet/year to average gpd. This allows the current municipal water consumption to be compared with the water right. A more detailed analysis of water rights is presented in Section V and in Appendix E.

I. Water Use

Systems were asked for historical water use information for the past 5 years. Only a few of the largest Class 1 systems provided this information, which is summarized in Appendix D. For those systems which did not have any historical water use information, we have listed the average and maximum daily water use for the most recent year as reported by the system or as obtained from the DOH records. If a system did not have any reliable estimate of water use, we have prepared our own estimate of this usage, assuming 2.67 persons per household (1980 U.S. Census) and a per capita average daily use of 100 gallons. Maximum daily usage is estimated at 250 gallons per capita per day. These average and maximum daily water use figures were developed as part of the CWSP to standardize estimates of future water requirements. (See Section III.)

3. DISCUSSION OF MAJOR WATER SYSTEMS

Oak Harbor, Coupeville, and Langley each provide water service within their incorporated limits and to some adjacent areas. The CWD is another large system with approximately 500 customers. Since the District is projecting considerable future expansion of its service area, it is also discussed. The following is a summary assessment of these major water systems.

A. Oak Harbor

The City of Oak Harbor operates the largest municipal water supply system in Island County which serves the incorporated limits and some adjacent area. The City has recently updated its comprehensive water plan.

The primary source of supply for Oak Harbor is from Anacortes through two parallel pipe lines (10-inch and 24-inch). The pipelines are owned by Oak Harbor and supply the U.S. Naval Air Station as well as Oak Harbor. The Navy installation actually consists of two separate facilities, Ault Field and the Seaplane Base. To supplement this source, the City still operates three deep wells, each with a yield of 180 gpm.

The system has limited delivery capabilities in some portions of its service area because of small-diameter distribution mains, which inhibit fire flow capabilities in these areas. The City has analyzed the system capabilities by computer as part of the update to its comprehensive water plan. This analysis has identified proposed construction to correct existing system deficiencies and to plan for future expansion.

The City's future service boundaries encompass several other water systems. It is not known whether these systems will continue to operate independently or if they will merge with Oak Harbor as the City expands its service area. Some of the systems have expressed interest in annexing to Oak Harbor and then receiving water supply from the City. The City will also consider serving additional customers along the supply pipelines from Anacortes.

Anacortes has applied to Ecology for a change of point of diversion to allow the withdrawal of up to 117 cubic feet per second (cfs) directly from the Skagit River. At this time, plans to expand the water supply lines from Anacortes to Oak Harbor are in a preliminary stage.

Oak Harbor is taking steps to protect the aquifer recharge area for its wells. Recently, the City purchased some land in order to retain it as "open space" in the interest of protecting the recharge area.

There are indications that Oak Harbor is interested in becoming more of a water purveyor for North Whidbey. This includes possible connections along the supply lines from Anacortes. If a new development expresses interest in supply, the extension would be financed by the developer but be built to the standards of the City and served through a master meter.

B. Clinton Water District

CWD serves approximately 500 customers in the area in the immediate vicinity of the Washington State ferry terminal at the south end of Whidbey Island. Currently, the service is primarily residential with some commercial customers including restaurants, banks, and other small businesses.

Five wells supply water to the system. One of these has high concentrations of manganese and is only used during periods of high demand. The remaining wells provide good quality water.

The system has two 100,000 gallon covered redwood reservoirs. There are plans to construct a new reservoir at the top of a hill on the west side of the current service area. An existing well in this merged development has been acquired by the CWD and would supply the reservoir. CWD has several pressure zones in order to be able to serve customers at higher elevations.

Annexation of the proposed new area would increase the CWD service area by nearly 400 percent. Requests for service have already been received from areas north and south of the existing service area. Construction of the proposed reservoir would provide excellent expansion capabilities to areas west and south of the existing service area.

Other planned capital improvements include upgrading the existing system. Various areas, including some beach front property, are served by 2-1/2 inch or 4-inch mains. This pipe has also been subjected to the corrosive effects of saltwater. Replacement of this pipe and other inadequate lines is proposed. Replacement with minimum 6-inch diameter lines would improve fire flows.

At present, there are no interties with neighboring systems. The CWD appears willing to become a water purveyor to other systems, provided it would not restrict service to current customers. CWD will consider acquisition and merging of adjacent systems, provided the system is upgraded to the standards of the CWD, if necessary. If the merging system has useful facilities such as a productive well or a reservoir in a

strategic location, this also may be an incentive for consolidation. For line extensions, the new customer requesting the extension is required to finance the project with possible reimbursement from latecomer fees.

The Comprehensive Water System Plan for CWD is currently being updated. When it is completed, it should provide additional information regarding specific plans for future system improvements.

C. Town of Coupeville

The Town of Coupeville operates a municipal water system which serves 670 customers including some areas outside the town. The Town is supplied by two wells located within the incorporated limits and by a well field several miles to the southwest of the Town. The two wells in town have water that is high in total dissolved solids so the Town has installed an electro-dialysis plant to treat the water.

The area currently served by the Town includes shoreline development along Penn Cove to the west of the Town, Camp Casey on the west shore of Whidbey Island, and miscellaneous customers between the well field, Camp Casey, and the Town.

The Town of Coupeville has a current comprehensive water plan which has been approved by the Washington State DOH. The Town has recently completed improvements to its distribution pipeline network within the Town to improve fire protection capabilities, has further developed the capacity of the well field, and improved the delivery capability from that source to the Town.

Coupeville's ability to supply water to new customers and/or to expand its service area is limited by its available source of supply. After completing the improvements mentioned above, Coupeville will be able to serve its present customers with some capacity for growth. Any significant expansion of the system would require the development of new sources. Prospecting for additional groundwater of good quality in the vicinity of Coupeville has not been particularly productive. Therefore, significant expansion of the customer base may require a supply from outside the service area.

D. Town of Langley

The Town of Langley operates a municipal water supply system which serves primarily the incorporated limits. Currently, the system has in excess of 600 connections, both commercial and residential services. Like other areas of the Island, there is a high seasonal population.

The supply is from four wells. This includes a new high-production well which was recently developed. It is estimated that the new well has a capacity in the neighborhood of 500 gpm. The water is chlorinated. One of the other wells yields water with high levels of manganese and is presently used as a backup. The total supply from all wells is in excess of 800 gpm. The water system has 275,000 gallons of storage capacity.

The Town of Langley has an approved comprehensive water plan, prepared in 1980, which is in the process of being updated. Future improvements include a line extension to the east which would create a loop for the Sandy Point area and would extend service to the east and southeast within the proposed service area. Additional storage has also been identified as a possible future improvement. The Town's policy is to require annexation of an area as a prerequisite for water service.

4. SYSTEM CAPABILITIES TO MEET EXISTING AND PROJECTED SERVICE NEEDS

The water service provided by the Class 1 water systems in Island County can be assessed in relation to local, state, and federal requirements; by comparison with usual standards and practices of water utilities; and by the satisfaction of the water system customers. At the federal level, the Safe Drinking Water Act sets forth standards for water quality in public water systems, and to a limited degree, establishes certain operating responsibilities of the purveyor to its customers. The Safe Drinking Water Act was extensively amended in 1986. Implementation of these requirements will have a significant impact on all public water systems. The Washington State DOH has issued recommendations, rules, and regulations governing public water supply systems which incorporate the Safe Drinking Water Act provisions and expand upon them with specific requirements for the planning, design, construction, and operation of the systems. The following are the principal DOH publications guiding public water supply:

- Rules and Regulations, Chapter 248-54 WAC detail the requirements of planning, design, water quality, and operations;
- Sizing Guidelines for Public Water Supplies - an aid for water system design;
- Planning Handbook - a guide for preparing water system plans.

Island County has adopted ordinances governing new water systems within the County (Chapter 11.01 and 13.03 ICC). In addition, water system standards are being developed and will be adopted by the County and water purveyors as part of this CWSP.

The water supply industry has established standards and practices, with leadership from the American Water Works Association. Unfortunately, much of this information is developed for water systems larger than most of those existing in Island County with professional, full-time staff.

Customer satisfaction is a less clearly defined measure of water service. The Preliminary Assessment of Water System Issues in Island County, prepared by the ICHD as part of the justification for this CWSP includes information on the system operator's perception of their water supply. The ICHD receives frequent complaints regarding water service which is evidence of system problems.

The assessment of the existing water systems can be organized into the general categories: (1) water quality, (2) water quantity, (3) operations and management, and (4) planning. The following is a discussion of the Class 1 water systems in Island County with regard to the above criteria. These are summary comments and do not analyze each system in detail. Some conclusions for the individual Class 1 systems can be drawn by reviewing the information presented in Appendix D.

A. Water Quality

The Class 1 systems generally sample the bacteriological and chemical quality of their water supply at the frequency required by the standards. It appears that most systems meet the primary drinking water standards. The Groundwater Resource Evaluation (Appendix K) identifies that iron and manganese are pervasive problems throughout Island County, with 30 percent or more of the systems inventoried exceeding the drinking water guidelines.

The 1986 Amendments to the Safe Drinking Water Act requires EPA to set maximum contaminant levels for a total of 83 substances. When these regulations are issued, the burden of water systems for monitoring and treatment of water supplies may be significantly increased. The 83 listed contaminants include synthetic and volatile organic chemicals, which were not previously regulated in water supplies. The Safe Drinking Water Act will also result in a requirement for disinfection (e.g. chlorination) of groundwater supplies which could also significantly affect the cost of delivering water.

Saltwater intrusion is a central water quality issue in Island County and is the most likely limiting factor in increasing groundwater development. Groundwater in areas of north and central Whidbey is relatively hard. Color and taste are also problems with some supplies related either to the above contaminants or to decomposed organic matter.

The majority of the Class 1 systems do not have chlorination. In addition, a number do not provide the 100-foot radius of protection from potential sources of pollution.

Each system is required to have a backflow prevention policy and to inspect its customers to identify and require correction of any potential cross-connection between sources of pollution and the potable water system. Many water systems have no backflow prevention plans.

B. Water Quantity

As shown in Appendix D, it appears that most systems have adequate supply to meet their present requirements and some additional capacity to meet future growth. It should be cautioned, however, that the well capacities are not verified and were either taken from DOH records, or reported by the system operators in the questionnaires or interviews conducted as part of this study. Most wells have been in service for a number of years and since the majority of the systems do not record the water consumption, the true capacity of the well sources is largely unknown.

Oak Harbor overcame its groundwater shortage some years ago by importing water from Anacortes. Coupeville has experienced both shortages and water quality problems and has implemented a water improvement project to try to keep ahead of its demands. Coupeville has experienced difficulty locating a reliable source of good quality groundwater supply. A number of other Class 1 systems have experienced difficulties obtaining an adequate source of supply, particularly those in areas affected by saltwater intrusion.

Many of the water systems in Island County were developed to serve platted subdivisions. Since the platting activity reached its peak during the 1950s and 1960s, the systems date largely from this period. At that time, neither Island County nor DOH had definitive requirements for sizing water system facilities. Both have since adopted standards to ensure that water systems can provide municipal supply and a measure of fire protection. Where subdivisions were platted in phases, the water facilities in each phase are generally adequate only for the phase and additional capacity would be required for subsequent phases.

Most of the rural Class 1 systems in Island County are able to deliver the water demands of the customers but are not adequately sized to provide fire protection. Generally, a looped grid of 6-inch pipeline is necessary in order to deliver minimum fire flows (500 gpm). Even systems with some

6-inch and larger lines have large quantities of smaller diameter pipelines. Some rural customers are therefore minimally protected from the risk of fire.

Storage is necessary for a system to meet extreme peak demands which exceed the source capacity and to furnish fire flows since most sources cannot deliver at the fire flow rate. Storage is also needed to give the system the ability to maintain service if the source of supply is contaminated or damaged, or in case of a power outage. The DOH sizing guidelines require 800 gallons of storage for each service connection in the system.

A precise evaluation of the ability of the source, storage, and distribution system to meet future demands is beyond the scope of this task. It should be addressed by the systems in their individual water system plans.

C. System Operation and Management

Only a few of the largest water systems have a full-time water system staff. The other systems have either part-time paid staff or, in most instances, volunteer personnel who look after the water system. As shown in Appendix D, most of the Class 1 water systems either have or are in the process of, getting their operators certified.

Most of the Class 1 systems in Island County have no documented operation and maintenance program or emergency response plan. In some systems, maintenance is limited to response to line breaks or other problems with the systems. Where there are no regular maintenance and renewal/replacement programs, and where facilities are aged 20 years or more, it is likely that deterioration is significant.

Another important part of water system operations is financial planning for water system operations and capital improvements. Where water rates have been kept relatively low, and sufficient only to pay for the continued system operation, there may be a financial crisis for the system and its customers in some cases when rehabilitation or repairs are required. Few systems meter individual connections. This would give better information about usage and lend itself to establishing equitable rates.

For the most part, the smaller Class 1 systems in Island County have not expanded in recent years except to add new customers within their service area. Most do not have any interest or intention of expanding their service area. The existing system facilities were installed many years ago by the developer or, in some instances, the property owners shared the

cost. New improvements are limited primarily to repairs and necessary replacements. These are paid either from the rates or through one-time assessments against the customers.

The need for capital improvements can be expected to increase over the next few years as growth continues, as older water system facilities wear out, and as source shortages and water quality problems require significant expenditures. One of the problems facing these systems will be financing the necessary capital improvements. The non-municipal systems have little or no access to state or federal grant monies or low interest loans. Also, because of their small size and the fact that they have no established financial credit, it is doubtful that individually they will have access to the normal channels for borrowing money. In any case, the improvements may require an increase in water rates or merger of a system in order to finance necessary source and storage improvements. Section VI of the CWSP will address a County management support system for water systems in Island County.

D. Planning

All expanding water systems within a CWSSA being addressed by a CWSP must prepare a comprehensive water plan, with some exceptions as indicated in the footnote of Exhibit II-1, page II-9. The individual system comprehensive water plans become an element of the CWSP. Plan Content Guidelines are described in Appendix B.

Planning requirements of water systems in Island County are addressed in Section II. As part of the survey of Class 1 water systems, a check was made on which systems had approved comprehensive water system plans. Oak Harbor, Coupeville, and Langley all have approved water system plans. All are in the process of revising and updating their plans. In addition, the Freeland Water District and CWD are involved in preparing comprehensive water system plans. As shown in Table IV-1, few of the other Class 1 water systems have current comprehensive water plans.

One of the purposes of the CWSP is to integrate water system planning with comprehensive land use planning. This is being done within the incorporated cities since they have jurisdiction both over their utilities and land use. At the present time, water system planning in unincorporated areas is coordinated with land use to the extent that the proposed water system is in a proposed subdivision. Here the water system is approved as one of the prerequisites for approving the plat. Engineering plans or comprehensive plans of existing water systems are normally

submitted to DOH for approval and would not necessarily be reviewed by the County. This could be inconsistent with land use planning as there would be no check that future service area extensions follow County land use criteria.

TABLE IV-1

ISLAND COUNTY
CHARACTERISTICS OF WATER SYSTEMS
(see note below)

Class	No. of Water Systems	No. of Systems with Approved Plans	Population Served	No. of Systems Not Meeting Water Quality Standards	No. of Systems with Inadequate Fire Flow
Area 1-No. Whidbey Is.					
Class 1	6	5	12,988	3	1
Class 2	42	27	3,844	17	31
Class 3	10	1	762	2	7
Class 4	35	16	483	6	26
Subtotal	93	49	18,077	28	65
Area 2 - Central Whidbey					
Class 1	9	7	19,104	4	4
Class 2	35	22	3,993	12	22
Class 3	9	2	673	4	6
Class 4	38	15	417	17	35
Subtotal	91	46	24,187	37	67
Area 3 - So. Whidbey Is.					
Class 1	11	9	8,880	7	4
Class 2	45	25	5,167	23	31
Class 3	19	4	1,565	5	19
Class 4	84	41	1,162	19	76
Subtotal	159	79	16,774	54	130
Total Whidbey Island	343	174	59,038	119	262
Area 4 - Camano Island					
Class 1	6	4	4,025	2	2
Class 2	50	34	4,683	24	24
Class 3	8	3	674	3	4
Class 4	44	23	458	17	34
Total Camano Island	108	64	9,840	46	64
TOTAL ISLAND COUNTY	451	238	68,878	165	326

Source: Preliminary Assessment of Water System Issues in Island County, January, 1985.

Note: The "areas" in this Table are not the same as subareas described elsewhere. The City of Oak Harbor is divided between the North and Central Whidbey areas.

SECTION V

WATER USE EFFICIENCY

1. WATER CONSERVATION AS A SUPPLY ALTERNATIVE

In Section VII, a discussion of supply alternatives for regional development is presented. These alternatives represent major undertakings in most cases and will require substantial planning and investment before they are implemented to provide significant new water resources to Island County. Based on engineering considerations, extension of the Oak Harbor pipeline to additional areas of north, and possibly central, Whidbey Island, and also extending supply from Stanwood to north Camano Island, appear to be feasible. In either case, there appears to be a viable source of supply which could be used.

However, the most desirable and cost-effective resource alternative is the efficient development of local groundwater if good quality supply can be found. The essentials of maintaining, developing, and conserving this resource are being identified and formulated into policy under the Ground Water Management Program, funded by the Department of Ecology (Ecology), for Island County.

Appendix K provides a regional groundwater resource analysis by Hart-Crowser & Associates, Inc. which draws the conclusion that, in some areas, replenishment of groundwater from natural sources is greater than probable future demand. This conclusion is based on water balance methods and is not equivalent to concluding that a sufficient and sustained yield of groundwater can be expected from wells developed in those areas. However, with proper management and design of well construction and use, together with monitoring, there is a greater confidence that water supply is developable where there is adequate replenishment. Subject to confirmation, the results of the groundwater resource investigation indicate that groundwaters are physically available on a County-wide basis to satisfy future demand through the year 2040.

The waters, however, may not be available where demands occur. At present very few water systems employ interties for transfer of water. Long distance transmission may be the only alternative to deliver adequate groundwater to where it is needed.

The indications of limits to groundwater supplies are strong enough in most areas of the County that it should be a priority of all groundwater users to employ conservation as a primary alternative to additional well construction.

The Washington 1988 Legislature, through Substitute House Bill (SHB) 1594, established a Water Use Efficiency Study Committee to examine water use efficiency and conservation in the State. The findings and recommendations of this committee were published in draft form in December, 1988. The recommendations address a broad range of municipal, industrial, agricultural, and public education issues, but also include some specific measures and concepts which can be implemented in any conservation program.

The effectiveness of conservation is dependent on the circumstances in which it is applied. Reported reduction of water demand on the order of 10 percent is not unusual. In Island County there already is a heightened awareness of water supply limitation. Because of this awareness, conservation is probably in effect to a certain degree. If a reduction, due to conservation, of 10 percent of domestic demand is accomplished in Island County, the potential "resource" to be gained is approximately 0.6 MGD of the current demand and as much as 1.2 MGD of the projected additional demand in Island County through 2040 (see Section III). A total potential resource saving of 1.8 MGD might be available.

Each public water system in Island County should at least prepare plans to implement conservation measures in times of water shortages. In areas experiencing salt water intrusion, there should also be active ongoing conservation measures in all public water systems. Conservation and reduction of withdrawal from a particular well may have important long-term benefits in preserving more groundwater storage for future use.

2. RECOMMENDATIONS AND REQUIREMENTS FOR LONG-TERM WATER CONSERVATION

Island County must develop a comprehensive water conservation program as a method for managing water resources on a long- term basis.

Elements of a conservation program are outlined in this chapter along with requirements for new and expanding water systems and overall conservation program recommendations. It is recommended that the comprehensive conservation program be developed and implemented as part of the Ground Water Management Plan (GWMP).

This Section addresses the following topics in water use efficiency:

- Public education
- Metering
- Water pressure reduction
- Water rates
- Leak detection and repair
- Water saving devices
- Building and plumbing codes

- o Water use restrictions
- o Landscaping
- o Water reuse
- o Irrigation
- o Infiltration/recharge
- o Retention systems

A. Public Education

Public awareness is essential to the success of a water conservation program. Citizens need to understand what conservation practices are intended to accomplish, what the costs of delivering water are, what the water resource situation is, and why the resource in Island County needs to be used conservatively now and protected for future generations. If water rate incentives are to be implemented, citizens need to know what they can do to reduce their own water use.

Voluntary commitment by consumers is critical in achieving reductions in water use. The installation of water-saving devices, restrictions on water use, and leak detection and repair all require the cooperation of the homeowner. A voluntary approach can result in decreased enforcement to achieve the desired changes in water use.

Public education can be achieved in any number of ways including: billing inserts, announcements in the news media, workshops, booklets, and distribution of water saving devices. The County should research grant funding opportunities to further public education efforts.

B. Metering

Water meters, which record the amount of water delivered to each residence or business, have been demonstrated to be effective in reducing water demands because users pay according to the amount of water they use.

The installation of meters makes water systems more efficient and water rates more equitable.

The minimum design standards as adopted by the Water Utility Coordinating Committee (WUCC) require individual and source meters on all new or expanding water systems. It is recommended that existing systems install meters in an effort to make the system more efficient and to promote water conservation.

Ecology has the authority to require metering as a condition of a water rights issuance. It, furthermore, has the authority to require reporting of withdrawal amounts.

C. Water Rates

Water rates are usually set to cover the cost of providing water. There are typically five cost components that must be recovered:

(1) Meter reading and account maintenance costs.
(2) Costs associated with average consumption.
(3) Cost associated with peak consumption.
(4) Fire protection costs.
(5) Costs associated with planning for an alternative or future source.

Water rates can help achieve long-term water conservation goals if the following criteria are met in designing rate structures:

- Rates must be based on the costs of development, transport, treatment, delivery, and future water supply development.
- Rates are related to the amount of water used.
- Increase rates enough to make consumers decrease their water use.
- Combine rate changes with a public education program.

Various rate structures are used to price water service. Methods that encourage conservation are:

- Inclining or increasing block rates (as the quantity of water use increases, the unit price of water increases).
- Peak demand pricing. This could be implemented seasonally as a summer surcharge for water use exceeding a baseline amount. This rate structure is effective in reducing outdoor water use.

Because conservation measures may reduce income, purveyors motivated by profit may be reluctant to install rate structures which promote water conservation. These purveyors should be encouraged, through incentives or regulation, to promote efficiency in their operations.

D. Water Pressure Reduction

Reducing excessive pressures (above 80 psi) in distribution systems decreases leakage, the amount of flow through open faucets, and leak-causing stresses on pipes and joints, ultimately saving significant quantities of water. Reducing system stress in turn decreases system deterioration, saving long-term repair costs and reducing breakage incidents.

In areas where pressure exceeds 80 psi, pressure-reducing valves should be installed in street mains or individual buildings. A 30% to 40% pressure reduction (from 90 to 100 psi down to 50 or 60 psi) would be expected to reduce overall demand by about 6%.

It should be noted, however, that minimum pressure limits are imposed by state regulations, fire-flow requirements and practical engineering aspects.

E. Leak Detection and Repair

Water leaks are responsible for a large percentage of water losses. Leak detection and repair program benefits include reduced costs for water development, treatment and distribution. As pipes are continually degrading, the detection and repair program must be ongoing.

Household water leaks are usually from leaky faucets and toilets, and from outdoor piping and fixtures. Most household leaks can be easily detected and repaired by the homeowner. New and expanding systems must develop and maintain a leak detection and repair program. It is recommended that all water systems develop and maintain a leak detection and repair program for their distribution systems and customers.

F. Water Saving Devices

The use of water-saving devices is a simple, cost-effective method to reduce water use. The following devices can reduce water use in households:

- Low flow faucets or aerators
- Pressure reducing valves
- Insulation of hot water pipes
- Toilet dams

It is recommended that water systems encourage customers to retrofit homes with water saving devices. Island County should try to obtain grant funding to provide retrofitting.

G. Building and Plumbing Codes

Revising building and plumbing codes to require water-saving fixture installation is an effective, long-term water conservation tool. It is recommended that Island County adopt local codes requiring installation of the following provisions for all new and replacement construction:

- o Low-volume toilets
- o Low flow showerheads
- o Low flow faucets
- o Insulation of hot water pipes

SHB 1397 added a new section to Chapter 19.27 RCW which provides phased-in water conservation performance standards.

H. Landscaping

Changing horticulture and irrigation practices can reduce water use significantly. Changes can occur in the following areas:

- o Plant choices
- o Landscaping practices
- o Watering methods
- o Organic material content in soils

New developments must landscape with efficient landscaping practices. It is recommended as part of a public education program that landscaping and efficient irrigation methods be promoted.

I. Water Reuse

Legislation was recently passed (SHB 1397) supporting utilization of grey water for lawns, gardens, trees, other uses consistent with the protection of public health, and water quality. It is recommended that support be given to Ecology and to the Department of Health (DOH) to prepare guidelines for improved water use efficiency and conservation.

J. Infiltration/Recharge

In much of rural Island County, rainfall is intercepted and absorbed by vegetation/soils. Additional rainfall over the retention capacity of the soil migrates towards streams, lakes, bluffs, or downward toward aquifers. Only in major storm events when rainfall exceeds the infiltration capacity does "runoff" begin. After development occurs with impervious surfaces, the runoff increases and infiltration decreases without the influence of

major storm events. This increased runoff is often diverted via ditches, culverts, and outfalls to the sound, thereby losing the benefits of recharge and also increasing the probability for non-point source pollution.

Infiltration systems can be designed to control increased development-related runoff by imitating pre-development hydrology. The result can be recharge of groundwater, improving water quality and, in certain cases, decreasing the need for expensive detention systems.

A danger with infiltration systems is over-simplifications of the concept without regard for the problems inherent in the approach. A major problem is the absolute necessity for specific and timely maintenance of the infiltration bed itself, as well as associated pollution control devices (oil/water separators, etc.). Other design problems include potential for groundwater pollution, contribution to failure potential for unstable slopes, possible impacts on down- gradient structures including saturation of sewage disposal systems (drainfields) and potential contamination of wells.

To avoid these problems, systems must be designed based upon specific soils identification, set back away from steep and/or unstable slopes, and away from drainfields and wells. Infiltration systems must also be designed with overflows and contingencies provided in case of failure or clogging. Some of these problems can be avoided by using open infiltration ponds as opposed to closed trench systems. Infiltration systems are not presently permitted in industrial areas in Island County.

In general, with recognition of the limits of the approach, infiltration can be a positive and long run insurance against depletion of groundwater aquifers by directing water to a recharge area.

It is recommended that research be conducted on existing drainage and surface water regulations to encourage safe and effective infiltration/ recharge systems and development of a local surface water manual with basic controls/standards for such systems.

K. Agricultural Irrigation

Agricultural irrigation is a major groundwater use and irrigators need to build in irrigation practices which maximize efficiency and resource conservation. Certain practices which could be instituted by agricultural irrigators include:

(1) Developing alternate sources of irrigation water by the construction of impoundments and catchment basins to prevent water

runoff into Puget Sound. Water recovered in such systems may be pumped to higher altitude retention ponds and used later for crop irrigation.

(2) Determining crop water needs in inches and utilizing pan evaporation data collection to determine weekly application rates.

(3) Annually inspecting irrigation system for pressure losses, nozzle size variations, leaks, and application uniformity.

(4) Applying irrigation water at rates which avoid field runoff.

(5) Developing soil moisture budgeting as a management tool in crop irrigation.

(6) Planting crops which require less irrigation.

(7) Upgrading efficiency of existing irrigation systems.

Best Management Practices for agriculture, as established by the Soil Conservation Service, should be followed as closely as possible.

L. Retention Systems

An additional category in water conservation encompasses catchment basins, cisterns, and other structures designed to trap and reserve storm runoff for future use. In agricultural regions, cost-sharing could reduce the individual capital costs of large pond construction. Such ponds could conceivably be used to supply several users with irrigation for much of a growing season. Cisterns which catch runoff from rooftops could easily accumulate enough clean water over the winter to supply a year's irrigation for a lawn or small garden. For new developments planning extensive landscaping, retention basins should be built right into the site plan.

As with infiltration systems, there is danger in oversimplification of retention systems, and they are limited by local factors. However, when properly installed and maintained, retention systems can significantly reduce demand on groundwater resources.

Irrigation Districts (as outlined in Chapter 87.03 RCW) may be organized to construct, operate, and maintain a system of diverting conduits from runoff water to the point of individual distribution for irrigation purposes.

3. SUMMARY OF WATER CONSERVATION REQUIREMENTS FOR NEW AND EXPANDING WATER SYSTEMS

The following comprise the requirements for new and expanding water systems. These are also recommendations for existing water systems:

A. Installation of individual and source meters.

*B. Implement rate structures that encourage water conservation.

*C. Develop and implement a leak detection and repair program.

D. Outline water use restrictions for drought periods in Operation and Maintenance Agreement.

* To be included in water plan

4. RECOMMENDATIONS

Island County should develop a comprehensive conservation program requiring the following:

A. A County-wide ongoing public education program.

B. Incentives to install source and individual service meters on existing water systems (County will research grant funding to make meters available).

C. Support water rate structures that encourage conservation.

D. Require all water systems to develop and maintain a leak detection and repair program.

E. Provide (if grant funding available) water saving devices for retrofitting.

F. Revise local building and plumbing code to require water saving fixture installation for new and replacement construction.

G. Develop guidelines for efficient landscaping practices and irrigating methods.

H. Revise the land development standards (ICC 11.01) to require new housing developments or commercial developments to use low water use landscaping.

I. Support and request the DOH and Ecology to develop guidelines for water reuse as outlined in SHB 1397.

J. Develop a local surface water manual containing basic standards and controls for infiltration/recharge systems.

K. Research and recommend agricultural practices which use water efficiently.

SECTION VI

COUNTY-WIDE WATER SUPPLY POLICIES

1. SERVICE AREAS AND SERVICE REVIEW

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

The Coordination Act provides the legal mechanism, for municipalities and private water purveyors alike, to establish an exclusive service area within the unincorporated County areas. This procedure provides the purveyors with the assurance that their planning, capital improvement programs, and financial commitments are consistent with State and County requirements.

In areas of the County expecting development and growth, designation of service areas for each water purveyor provides orderly growth of water service. Purveyors can address future needs from an engineering, financing and operations standpoint for a forward planning period of about 10 years. Defined service areas allow purveyors to implement capital improvement programs with relative assurance of a future customer base. Purveyors who do not intend to expand benefit from service area designation by knowing of planned expansion in nearby systems. Even for water systems not expanding now, circumstances may arise where benefits of expansion should be re-evaluated as an alternative to creation of an independent adjacent water system.

From the County's perspective, designated service areas for new and expanding water systems will mean a specific purveyor has accepted responsibility to plan 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 Plan and Zoning Ordinance may be accounted for in each purveyor's approved plan and actual improvements.

The Coordination Act requires that 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 municipal boundaries, future population projections, and sewer service areas. The Act also specifies that these service areas be developed in conformance with the land use policies of the County.

A. Service Area Commitments and Procedures

The designated service area defines the area within which a designated purveyor plans for provision of retail water service to all future customers. Notwithstanding this, a purveyor's water facilities, such as sources of supply and reservoirs, can be located outside a water system's future service area. These facilities can be located within another purveyor's retail service area; provided the facilities are not used for direct retail service without the written concurrence of the designated purveyor.

Once adopted as part of this Coordinated Water System Plan (CWSP), the designated service area will be the exclusive service area of the identified water system. Existing systems without formalized agreements will be recognized and contacted during Utility Service Review Procedure (USRP) proceedings. As a condition of being granted a designated service area, the purveyor shall meet certain obligations and commitments, as described in the following:

(1) Water System Plan and Service Area Agreement

Each new or expanding water system is required to prepare and submit to the County a Water System Plan within 1 year after CWSP adoption. The Water System Plan must be approved and must identify the service area boundaries. Prior to approval of the plan, the water system shall have exclusive service rights only to its existing service area. In this case, service outside of the water system's existing service area will be assigned, according to the USRP, as though located in an undesignated area.

Once a CWSP is approved and service area agreements are in effect, the service area will be assigned to that water system. If, at any time, Department of Health (DOH) determines the water system has failed to comply with the standards or provisions of its Water System Plan, the designated service area may be revised.

(2) Conditions of Service by Designated Water System

Water service can be provided by the designated purveyor either through direct connection to the existing water system, or as a detached satellite system managed by the purveyor. In either case, the purveyor will identify for the applicant all of the conditions of service which must be agreed to prior to the provision of water service. The Coordination Act requires that the purveyor be

willing to extend service in a timely and reasonable manner. Once the applicant and purveyor agree to these conditions, a sewage permit or preliminary plat approval can be issued.

(3) Interim Service Agreements

A water system may receive a request for service within its designated service area and may not be able to provide immediate service. If this occurs, interim services by an adjacent water system or a Satellite System Management Agency (SSMA) may be allowed by the designated water system. They may be accomplished either through physical connection to an adjacent water system or installation of a detached satellite system. These services must be stipulated in a written agreement. Service area adjustments are not required for provision of interim services. If a designated water system is unable to provide direct service, or service by interim agreement, in a timely and reasonable manner the proposed new service is provided by another purveyor in accordance with the USRP.

(4) Service Area Adjustment

In the future, if a water system determines that its service area is either too large or too small, the service area boundaries may be revised at any time. Removing a part of a water system's service area requires submitting a revised service area map with associated plan amendments. Addition of new service area will require the signing of revised service area agreements or amendments among the affected adjacent purveyors. Such revisions and agreements shall be approved, following the procedures of the CWSP, and filed with Island County Planning Department (ICPD) for incorporation in the official CWSP file.

This CWSP must be reviewed by the Water Utility Coordinating Committee (WUCC) at a minimum of every 5 years and updated as necessary. Service areas adopted in this Plan may also be revised at that time, if such revisions are considered appropriate by the utilities concerned.

B. Service Area Selection Process

The Public Water System Coordination Act specifies that no new public water systems be created unless an existing system is unable or unwilling to provide service. Therefore, existing systems had to be defined, identified, and contacted to establish their existing and anticipated future service areas.

All Class 1 and 2 purveyors were contacted and asked to verify their existing service area, as well as boundaries depicting their anticipated future service area.

A first step in determining criteria for future service areas is to establish a definition of "existing" service area. The following criteria were adopted by the WUCC for existing service areas:

- Municipal corporate boundaries;
- Special district boundaries;
- Boundary Review Board designated boundaries which are between municipalities, or for which a municipality has a DOH-approved Water System Plan (WAC 248-54-065);
- Properties served by existing distribution systems;
- Properties served by distribution systems for proposed developments, where the water supply facilities design (Plans and Specifications) had been approved by DOH and the development has been given preliminary permit approval before May 12, 1986.

The WUCC also adopted a recommendation that future service areas be identified according to the following criteria:

- Those areas likely to be served by the existing water system within 10 years (does not include future satellite systems).
- In urban locations, areas consistent with municipal boundaries, Zones of Influence and Urban Business Center planning, and provision of other services, such as sewers.
- Those areas hydraulically compatible with the existing system and to which service can be extended without requiring costly supply facilities compared to other alternatives.
- Those areas where expansion of an existing water system does not conflict with the adopted Island County Land Use Plan and current growth management policies. (Purveyors should evaluate this criterion before proposing future service areas. If questions arise, the Planning Department may be asked to submit a statement of no objection to the proposed service area expansion.)

- o Adjacent properties owned by a purveyor, provided a future service area based on this criterion does not create conflicts with the other criteria listed above.

Once future service areas are proposed, the Coordination Act requires that written agreements be entered into with adjacent water systems. This requires a good faith effort by all parties. If an effort has been made and no agreement can be reached, a conflict may be referred to DOH. DOH will hold public hearings to determine priorities for water service and may establish expansion limits for the utilities.

Service areas were computerized using AutoCAD Version 9.0 onto a master set of reproducible maps and provided to the ICPD. Exhibits VI-1A through VI-1D show locations of service areas which were provided by utilities at the time of CWSP preparation.

C. Service Area Agreements

A Service Area Agreement was drafted and approved by the WUCC and forwarded to the utilities for signature along with final copies of their future service area maps. A copy of the Agreement is included herewith as Exhibit VI-2.

Considering the number of purveyors, establishment of individual agreements among all water systems in the study area is extremely cumbersome. Therefore, the Standard Service Area Agreement was used to allow a purveyor to agree with the boundary of its service area as it is shown on the official County map. In so doing, the purveyor acknowledges adjacent purveyor boundaries also shown on this map, and thus avoids entering into separate agreements with each adjacent purveyor.

Where understandings concerning joint service, transfer of service, or common boundaries require more specific terms than are provided in the Standard Agreement, the affected purveyors address the specific conditions in the supplemental agreement. In order for these agreements to be recognized in implementing the CWSP, the purveyors must place them on file with Island County Public Works (ICPW) as an addendum to the Agreement.

To confirm designated service areas and establish legal service boundaries, all new and expanding water systems must complete the appropriate agreement and submit it to ICPW, in conjunction with its individual Water System Plan. Unless a documented health-related problem is involved, failure to submit a service area agreement will result in denial of approval for proposed expansions within the service area. For water systems with unresolved service area conflicts, this denial should be

limited to proposed activities within the contested service area. Expanding water systems shall apply to the County to revise franchise boundaries to coincide with designated water service boundaries.

Appendix F includes, by reference, all completed and approved service area agreements.

D. Unresolved Service Areas

There were no known service area disputes at the time of finalizing the CWSP Regional Supplement.

E. Service Area Boundary Change Procedure

Changes in water system service area boundaries will occur when two systems wish to expand or reduce their service areas. These 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 water systems requesting boundary changes. The ICPW will review and approve all requested adjustments in service area boundaries to ensure that utility service is consistent with the CWSP objectives. The ICPW will maintain and incorporate all approved boundary changes on the County's official service area maps, and forward these changes to DOH and other appropriate County agencies. These boundary changes will be integrated into the USRP.

The realignment of service area boundaries will require an amendment to the water system's comprehensive plan when the plan is updated every 5 years.

F. Utility Service Review Procedure

(1) Authorization

The USRP is authorized by Chapter 70.116.040 which states:

"No other purveyor shall establish a public water system within the area covered by the plan, unless the secretary [DOH] determines that existing purveyors are unable to provide the service."

The State-wide regulations promulgated under the Coordination Act (Chapter 248-56 WAC) require that new water system service areas be assigned to a designated utility according to a specific sequence of priorities. The intent of these provisions is to require

that existing water purveyors have an opportunity to extend the required service, provided they can do so in a timely and reasonable manner. This consideration in the approval of water systems affords control over the unnecessary proliferation of water systems, and does not prohibit the establishment of new purveyors or water systems, if appropriate.

The USRP is the articulation of these Coordination Act Provisions as a regional policy within the CWSSA. The service areas of each purveyor are identified and recorded by the County so the location of existing water systems near any proposed new public water supply can be established. Those purveyors that establish a future service area by agreement with other purveyors, and meet the associated planning requirements identified in this Regional Supplement, are given an exclusive right to extend service within that designated service area, so long as they are willing and able to do so in a timely and reasonable manner. A purveyor may relinquish all or part of a future service area at any time before agreeing to provide service to customers.

The priorities assigned to approval of new water service are described in WAC 248-56-620. In summary, the regulation requires that any new water service in the future service area of a designated purveyor be provided by that purveyor, that service outside of a designated service area be referred to adjacent purveyors, and that a new purveyor be created only if existing purveyors are unwilling or unable to extend service in a timely and reasonable manner in accordance with the priorities.

(2) Water Service Review Process

Island County and DOH jointly carry out review of public water systems in accordance with an operating agreement that allows the Island County Health Department (ICHD) to approve Class 3 and 4 systems. Most often, new public water service is associated with a plat, short plat, or PRD approval. In these cases, a pre-application meeting is held to review all requirements and conditions of use or Plan approval. At that time, the proposed water purveyor may be identified as an existing water system approved for service in Island County. If it is demonstrated that no conflict with service areas of other utilities is created, and the purveyor has agreed to provide service in accordance with County standards, and the applicant agrees to such proposed service, the USRP is considered completed and permits may be issued subject to design and construction requirements.

The USRP is applied to proposed new public water supplies as shown in Exhibit VI-3. The location of a proposed new service is provided to the ICHD to evaluate possible purveyors. If the proposed service is located in a designated service area, the applicant is expected to meet conditions of service required by the purveyor, and the purveyor is expected to extend service in a timely and reasonable manner according to its approved water system plan. If an applicant disputes the conditions of service proposed by a designated purveyor, an appeal to a peer review committee may be made, as provided later in this Section.

Outside of a designated service area, adjacent water systems capable of providing service may be identified by either the applicant or by ICHD. The applicant must document that it has made bona fide requests of the identified adjacent purveyors to supply water service. Documentation must be provided through the Certificate of Water Service Availability shown in Exhibit VI-4 and copies of formal applications for service submitted to water purveyors. The applicant will then select a purveyor to discuss conditions of service.

If no adjacent water system is able or willing to provide service, an applicant will be referred to the prequalified SSMAs. The applicant may determine that an SSMA is suitable to establish a new water system, or, if no SSMA proposal is acceptable, may decide that a new water purveyor be created. However, no new purveyor water system will be approved unless the applicant has provided documentation to the ICHD that a request for service in good faith has been made to adjacent purveyors and SSMAs, and those contacted have either denied service or have proposed conditions the applicant will not accept. Furthermore, the new water purveyor must be demonstrated to have permanent financial and operational capability to comply with CWSP provisions, State and federal regulations, and County requirements. This capability may be demonstrated by satisfying SSMA prequalification requirements as given in Section VI.4.

When a new purveyor or an SSMA is designated as manager of the water system, the ownership responsibility shall be formally identified before final USRP approval. Except in the case of single system ownership described in Section VI.4, ownership of the water system facilities, including any required easements or covenants, shall be transferred to an SSMA prequalified in accordance with Section VI.4. A sample agreement for transfer of ownership is provided in Appendix J.

The applicant for new water supply service approval is required to coordinate completion of the USRP by making contact with any appropriate purveyors for the purpose of identifying the terms and conditions of service. When a designated purveyor is determined by the applicant in accordance with the USRP, a Certificate of Water Availability must be submitted before final approval. The standard Certificate of Water Service Availability is included in this Section as Exhibit VI-4.

The USRP is to be completed, and the designated utility determined, prior to preliminary approval of site plan, plat, short plat or planned residential development. The USRP shall be conducted by the County in a timely fashion so that the plan review and approval shall not be unduly delayed. Plan review should be completed within 40 days. The conditions of the preliminary approval which pertain to water supply are to be addressed to the satisfaction of the County in a service agreement between the utility and the applicant.

(3) Responsibility of the Designated Purveyor

Any purveyor designated under the USRP has, by definition, identified to the applicant the terms and conditions under which the purveyor agrees to provide service, as requested by the applicant. Further conditions required by the County or DOH are subject to negotiations before a final agreement is reached. The purveyor and applicant must both negotiate in good faith. The designated purveyor must supply to the applicant, on request, a written statement certifying that it is willing and able to supply the specific water service requested according to the adopted policies of the utility. Such a Certificate of Water Availability is a prerequisite of preliminary approval of site plan, plat, short plat, or planned residential development. The utility must also make available for inspection by the applicant the approved water system plan for the proposed service area.

When a change in approved service area is required by a proposed service extension, the designated purveyor is responsible to submit for approval an appropriate amendment to its comprehensive plan in accordance with DOH requirements. A water system which has not submitted a plan, but is expanding to serve the proposed development, is required to obtain approval of an appropriate planning document, in accordance with DOH requirements (Section II).

(4) Requirement of Timely and Reasonable Service

The requirement to provide service in a timely and reasonable manner implies that the purveyor has established fees and charges which can be shown to be consistent with costs of service to be provided to the applicant, that other terms required by the purveyor are consistent with normal and prudent practices of the water supply industry, that all applicable provisions of state law and County code are met, and that the purveyor shall agree upon a schedule for construction based on meeting service responsibilities at the earliest practical time, subject to circumstances within its control. If delay is encountered because of unforeseen circumstances, the purveyor must promptly notify the applicant of the reasons.

When an applicant assumes responsibility to construct the facilities in accordance with the standards of the utility, the utility must, on request, identify all pertinent standards, and must accept facilities complying with the identified standards.

(5) Resolution of Disputes

Disputes which occur in implementation of the USRP should be resolved by mediation wherever possible. A peer review committee shall be established to conduct fact finding and dispute resolution. The peer committee shall be comprised of five persons appointed by the Board of County Commissioners (BICC).

A finding by the review committee cannot be binding on the parties unless all parties agree, but a finding may be required prior to further appeal. If the peer review committee requires supporting administrative services from the County, such as collection of information or clerical services, the County may establish a fee to cover actual costs of such services. When a dispute on matters other than service area boundaries cannot be resolved by mediation, it is recommended the dispute be referred to the BICC. The BICC shall decide after review of testimony, provisions of the CWSP, and requirements of County code. Appeal of the decision shall be to the BICC.

2. MINIMUM DESIGN STANDARDS

Island County will adopt, concurrently with the CWSP, minimum standards for public water systems as ICC Chapter 13.03. A combined enforcement responsibility is vested in the Island County Health and Engineering Departments. The Coordination Act requires that the WUCC determine minimum standards for

public water systems, including fire flow performance standards. Any new or expanding water utility must adopt design standards. The utility may adopt the minimum standards by reference, or may adopt more stringent standards.

The WUCC appointed a subcommittee to review requirements and recommend comprehensive minimum standards to be adopted by water utilities. Existing ordinances were identified and evaluated. The Subcommittee determined that a number of provisions needed to be added to the existing standards, and clarification was needed of several conflicting provisions of existing ordinances. Based on work of the Subcommittee, the WUCC adopted a recommended revision to existing ordinances which removed conflicting provisions from current ordinances, added minimum provisions required by the Coordination Act, and consolidated water system standards.

Appendix G is the recommendation of the WUCC for a revised Chapter 13.03A of Island County Code. The adoption of this ordinance is recommended and, when adopted, the final version, or any subsequent amendment, should be inserted in the CWSP as revised Appendix G.

The following summarizes key recommendations of the WUCC for water system minimum design standards:

A. Applicability

Minimum design standards apply to new construction and not replacement of existing facilities for rehabilitation purposes. Nevertheless, the minimum standards are deemed to be appropriate for any utility construction and, therefore, it is recommended that utilities consider adopting at least these standards for even renewal and replacement. Applicability of fire flow provisions is in accordance with WAC 248-57-200.

B. Fire Flow Planning

The standards adopt an approach for a water system to take both current and future customer base into account in design of facilities. A utility is required to identify land uses for its service area and apply appropriate quantity standards for flow and duration. Actual improvements, buildings, etc., may be required by the Island County Fire Marshal to provide fire flow exceeding the amount set by the minimum standards. Such additional requirements, incumbent on the owner of the site, are then provided under terms negotiated with the utility.

C. Franchise Requirement

The WUCC developed a proposed consolidation and clarification to County franchise requirement for water utility construction. A review of franchise requirements under Ch 11.01.080 and Ch 12.16.001 is recommended, and any conflicting provisions should be repealed.

D. Lead-Free Materials

Provisions were included providing for use of lead-free materials, in compliance with Safe Drinking Water Act Requirements.

E. Flow Measurement

Island County does not presently have a requirement for system metering. Provisions are outlined to require metering of new and expanding systems, under certain circumstances.

F. Facility Placement

Placement of below-ground utilities are covered by recommended provisions requiring minimum horizontal separation of water piping from other utilities.

G. Fire Flow

Fire flow design requirements are recommended based on Chapter 248-57 WAC requirements. Water utility minimum design is based on development classifications served by the utility. The Fire Marshal is recognized as having additional authority to set fire flow standards for buildings and other site improvements, based on appropriate standards. The additional required flow may be supplied from the water system, but is to be part of the conditions of service negotiated by the applicant and utility.

H. Phased Construction

Under appropriate circumstances, the County may approve compliance with fire flow by a phased construction plan. This allows a determination of ultimate fire flow requirement, which must be used as a criterion for design of any facilities, but does not require immediate fire flow capabilities. Rather, these facilities would be provided on a schedule more closely matching actual growth of the water system. This phased approach is to be consistent with fire flow requirements outlined in ICC Chapter 11.01.090(M).

3. WATER SYSTEMS MANAGEMENT SUPPORT PROGRAM

The problems experienced by many Island County water systems, described in the Preliminary Assessment and in Section IV, demonstrate the need for a program of management support and assistance. All public water systems would benefit from a program which includes financial support for improvements, regional supply development, resource management, water quality monitoring, and satellite system services. Although many water systems have adequate financial and technical resources, the number of those needing support is significant. The coordinated efforts of water systems and County government are needed to forestall the cumulative effect on the public of problems not addressed by the individual water systems.

The following support program for public water supply management is recommended:

A. Creation of a County Public Works Department

A Public Works Department may be established under the existing authorities of the County. However, ownership and development by the County of public water systems and regional facilities requires adoption of a Water General Plan under Chapter 36.94 RCW. County services as a water purveyor will also require compliance with CWSP provisions. This is done by establishing prequalification for satellite system management, as provided later in this section, and designation for service under the USRP.

A Public Works Department may be established initially under the Engineering Department. Initially, monies must be provided from general funds for staff and support. A revenue base for independent operation might then be established through user rates. A possibility also exists for the County to develop revenues from contract services provided to water systems. Construction of capital facilities may take place through utility local improvement district (ULID) assessments, Public Works Trust Fund loans, or issuance of revenue bonds. An example budget for a County Public Works Department is given in Table VI-1.

Major regional supply facilities development will likely require direct participation by the County, in cooperation with municipalities, in order to benefit from low cost public financing. A County Public Works Department could fulfill a sponsorship role, and provide assurances that new facilities are developed in a fashion which is compatible with the overall public interest, and with County comprehensive planning objectives.

B. Establishment of Regional Water Associations (RWA)

RWAs are emerging in other areas of the State as a viable basis for providing management support to water systems. An RWA is a non-profit corporation made up of water systems by voluntary membership. The RWA serves as a representative of the best interest of its members and can play a role in developing contract support services, coordinating shared facilities development and conservation assistance. ICPW is identified as the local agency to provide technical assistance to purveyors. Examples of formation documents for an RWA are provided in Appendix H.

4. SATELLITE SYSTEM MANAGEMENT

A Satellite System Management Program is recommended which is to meet the following goals:

- Provide new public water supplies in areas outside of planning areas of existing water systems.
- Provide a high level of service and long-term reliability from a management and operations standpoint.
- Reduce the proliferation of water system owners without adequate qualification.
- Promote a mechanism for providing water service in a cost- effective manner.

An SSMA is defined as any entity, public or private, which has met minimum qualifications to own, manage, and/or operate new public water systems in Island County. Existing water systems, which continue to meet applicable laws and regulations, including CWSP requirements for expanding systems, are stipulated to be qualified.

The advantages of a Satellite System Management Program are in creating a standard of qualification for water system management. Any existing water system, expanding system, or new system should evaluate the option of an SSMA when a change of management is considered. The SSMA should be able to provide cost-effective and reliable service, and should be familiar with the increasingly difficult regulatory demands placed on water system. Each water system has the ability to assess its management needs and determine whether an SSMA could be utilized.

There are several levels of service available to utilities through the Satellite System Management Program:

Technical assistance is available to utilities that want help in improving their water system or its operation and management. The SSMA can provide its services at this level through one-time agreements or continuing contracts. Services provided could include training, dissemination of public information, joint purchasing with other utilities to achieve economies of scale, and providing expert engineering assistance to solve a utility's operational problems.

Contract service may be desired by a utility to help meet some or all of its regular or emergency operational needs. Such services as emergency or scheduled maintenance, laboratory services, and billing services may be provided through a contract with the SSMA. In each case, the SSMA may have certain policies and requirements to be met by the utility.

If the SSMA is asked to assume broad operational or maintenance responsibilities for the system, it may require that some minimum improvements, as mutually agreed, be made by the utility's owners. These policies or improvements will be identified to the utility and made a part of any contract so the utility will not be obligated except in its own best interest.

Direct Service is the transfer either of system ownership of responsibility for development and management to the SSMA. Again, like other types of service under the SSMP, this option is available at the request of the present ownership of the water system. As in Contract Service, the SSMA may have minimum requirements for water system facilities which require that improvements be made before transfer of assumption of system management takes place.

Under the USRP, previously described in Section VI.1, a new public water system may be created in the case where no existing system is willing or capable of extending the requested service. This circumstance may appear in areas not designated as a future service area by an existing system, or in a designated service area where direct connection cannot occur and the designated utility declines to operate a "remote" system.

In such cases, approval will require that a prequalified SSMA be identified either to own and manage the water system, or to provide comprehensive management under contract. Examples of contracts for management or ownership by an SSMA are provided in Appendix I. Alternatively, the applicant may elect to create a new management entity, if no other service is available in a timely and reasonable manner from existing prequalified SSMAs. Prior to approval, however, such a new management entity must demonstrate that it can provide permanent service to existing and future customers and that it can comply with applicable laws and regulations.

Prequalification as an SSMA requires satisfying the following criteria:

A. For Transfer of Ownership or Ownership of New Systems

(1) Financial Capability. A written financial plan must be implemented which includes projected operation, maintenance, and administrative costs, and capital costs, including debt service. Sources of funds must be identified to apply to the projected costs. Unless the SSMA is a municipally owned water system, or regulated by the Washington Utilities and Transportation Commission, the SSMA must show financial capability by documentation of guaranteed funds available equal to: replacement in kind of the largest source of supply owned in any of the systems of the SSMA (cost to be determined by a professional engineer); plus 45 days of annual operating expenses as documented by a business plan reviewed by a certified public accountant. Funds are to be guaranteed as either cash, letter of credit, bond, or third party guarantee.

(2) Operations Personnel. The SSMA must have at least a certified Distribution Manager I, and must comply with Chapter 248-55 WAC based on the total services in all systems served by the SSMA. The SSMA must also certify that at least one of its senior personnel has direct responsible experience, within the last 5 years, in daily, on-site, or around-the-clock water system operation.

(3) Emergency Response. The SSMA must certify that emergency service is available to all customers on a 24-hour basis.

(4) Uniform Rates and Fees. In each water system served by the SSMA a written schedule of rates and fees must be provided on request.

(5) Operations Program. The SSMA must implement a written operations program, including at least routine operations, preventive maintenance, record keeping, water quality monitoring schedule, protective covenants, and public notification. The Operations Program must comply with Chapter 248-54 WAC and be approved by Island County and DOH.

Each calendar year, SSMAs will be required to maintain current prequalification for transfer of ownership by submitting to the County a renewal which recertifies or amends the above qualifications, and identifies all systems managed by the SSMA in the previous year. The County should maintain a list of prequalified SSMAs, as well as records of any default or enforcement actions.

B. For Contract Management of Water Systems (i.e. comprehensive management without transfer of assets)

(1) Contract Provisions. A standard written contract must be established by the SSMA. The final contract between the owner and SSMA is to be negotiated.

(2) All requirements described above under Transfer (Section VI.4.A.), except financial capability.

C. For Limited Contract Services

(1) No Prequalification Requirements. However, legally required licenses, registration, etc., must be obtained.

D. Qualifications for Ownership and Management of a Single New Water System (unless management is by municipal corporation, or is regulated by the Washington Utilities and Transportation Commission)

(1) Business License or Registration as a Legal Corporation in the State of Washington.

(2) Approved Plans and Specifications and Water System Plan in accordance with Chapter 248-54 WAC.

(3) Operations Personnel. At least one person identified as Water System Superintendent with either certification in accordance with Chapter 248-55 WAC, or direct experience within the last 5 years in daily, on-site, or round-the-clock water system operations. Operations personnel requirement may be provided by contract services with qualified agency or individual.

Prequalification of SSMAs is to be coordinated by Island County. It will be necessary to provide additional staff resources via the Public Works Department for management and implementation of the Satellite System Management Program.

5. WATER SUPPLY RESERVATION

A. Overview

This subsection provides a discussion of the Reservation of Water Supply for public use, and an assessment of existing water rights. The discussion also addresses the need to reserve groundwater for future public water supply purposes as a component of the Island County Coordinated Water System Plan (CWSP).

A major piece of water resource legislation that affects the reservation process was enacted into law during the 1988 session of the Washington State Legislature. Under Engrossed Second Substitute Senate Bill 6724 (E2SSB 6724), the Department of Ecology (Ecology) is precluded from adopting any water reservation under RCW 90.54.050 or from adopting any new rules or changes to existing rules to reserve or set aside waters (e.g. Chapter 173-590 WAC) until July 1, 1989, or until the Legislature has passed new legislation, whichever comes first.

The information developed for the evaluation of the need for a reservation is of importance, however, for future water supply planning and operation purposes regardless of whether the water is reserved or not. Therefore, the remaining part of this Section has been prepared as if E2SSB 6724 had not been enacted.

B. Reservation Process

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

Chapter 173-590 WAC also provided a means for Ecology to move ahead on the reservation program based on a petition process. The regulation allows any person, municipality, public, or private entity to petition Ecology to reserve surface or groundwater for future public water supply, but at the same time the responsibility for data acquisition, substantiation of need, water availability, etc. is on the petitioner. In effect, it allows an individual or local entity to trigger the process, if sufficient information (the reservation package) is provided to allow Ecology to move into the rule-making process.

One objective of this CWSP is to assure that the populace of Island County has an adequate future water supply. One important element of this process is to identify the most logical sources to accommodate the projected public water supply demands; and, if appropriate, have them formally set aside now (reservation process) so that continued planning and water supply development can follow a rational course.

In order to petition for a reservation of water for future public water supply, it is necessary to submit to Ecology the following items:

- o A DOH-approved CWSP.
- o A satisfactorily completed "Petition for Reservation of Public Waters", in compliance with Chapter 173-590 WAC.

Additionally, compliance with the State Environmental Policy Act is a requisite.

A water supply reservation does constitute an appropriation (see RCW 90.03.345), the same as any other of the more traditional appropriation water rights covered by the State water codes. Therefore, Ecology's considerations on a petition for reservation are similar to those on an application for water right permit, except they are more in-depth and complex. Notwithstanding the fact that a reservation constitutes an appropriation, it is subject to review and modification, as necessary, at least once every 10 years (see WAC 173-590-140). It is expected that data acquisition, resource analysis, planning, monitoring, and associated management activities relating to the reserved water and the geographic area it is intended to serve, will continue with updated findings of the on-going studies to be reported in the 5-year updates of the CWSP.

In order for Ecology to process, evaluate, and consider a public water supply petition (with its present staffing), the petitioner must submit adequate data to show: the projected need for future public water supply in a given geographical area for 10, 25, and 50 years in the future; an evaluation and selection of the best alternative among available sources; and, a determination that there is water available from the selected source in excess of the amount necessary to satisfy existing rights and the projected future need.

Documentation must also be provided to show that setting aside a reserved block of water for future public water supply is necessary and consistent with the policies set forth in the Water Resources Act of 1971 and will provide maximum net benefits to the people of the State. It must be shown that the proposed utilization of such waters for public water supply constitutes the highest feasible use of the waters in question.

C. Reservation Requirements

This CWSP presents information that supports a need for additional water of acceptable quality to serve future public water supply in the CWSP area. However, as discussed later in this Section, a petition for reservation of groundwater may not be needed now. It definitely would

not, in itself, solve the long-term water supply problems of Island County. It is still important to discuss the issues that arise in evaluating the need for a reservation. For general consistency with some of the other ongoing CWSP work, the information has been broken down into four geographic areas, where appropriate; North, Central, and South Whidbey Island, and Camano Island.

(1) Public Water Supply Need

Section III presents the projected water demands for Island County CWSP area through the year 2040. The methodology and assumptions used are also explained in that Section. For the purpose of a reservation petition, the appropriate years for specific need identification would be 2000, 2015, and 2040.

The CWSP includes a range of projected demands based on two different growth scenarios using publications prepared by the State Office of Financial Management (OFM) and the ICPD. A conservation element has not been included in the projections.

Using projections based on OFM, as discussed in Section III, the total average annual demand, including seasonal, (expressed in average MGD) for the CWSP area are: 7.8 MGD for the year 2000, 9.3 MGD for the year 2010, and 13.8 MGD for the year 2040. The peak day projected demands are: 22.0 MGD for the year 2000, 26.3 MGD for the year 2010, and 39.0 MGD for the year 2040.

(2) Evaluation of Existing Water Rights

The water rights printout (report date 9/19/86) from Ecology was reviewed along with data from the utilities. Water right analysis is always difficult because of the complexity of records (e.g. once a certificate of water right is issued, the recorded name on the water right does not change with its ownership). In the case of Island County, it is made more difficult by the large number of public water supply systems. There are almost 500 water rights issued that include domestic multiple or domestic municipal as a purpose of use.

Table VI-2 is a summary of Class 1 public water systems showing the relationship between the in-service capacity and the water rights, as well as the totals. The data has been compiled from the listing of the individual Class 1 utilities with associated water rights and in-service capacities. These data are tabulated in Appendix E. DOH, U.S. Geological Survey (USGS), Ecology records, and

reports by Hart-Crowser & Associates and R.W. Beck & Associates were reviewed along with questionnaire responses from the utilities in an effort to get the best data available. Where there were variances or discrepancies in data, Ecology records were used for water rights and the R.W. Beck findings were generally used for the in-service capacities.

A summary of all public water supply recorded water rights for Camano and Whidbey Islands is as follows:

	Permits and Certificates			
	Instantaneous	Annual		Supplemental
	GPM	AF/YR	MGD	AF/YR
Camano Island	6,841	4,153	3.71	94
Central Whidbey	4,565	2,707	6.70	182
North Whidbey	9,408	7,509	2.42	490
South Whidbey	6,825	3,560	3.18	600
Whidbey Island	20,798	13,776	12.30	1,272
Island Co. Total	27,639 (39.8 MGD)	17,929 (2.0 MGD)	16.01	1,366

New permits have been issued and some applications may have been cancelled since the report date of September 19, 1986. However, such changes will not significantly affect the comparison of water rights and water needs, which is the purpose of this Section.

"Instantaneous" amounts refer to the peak rate of withdrawal allowed at a given moment. Normally, its value is the same as the installed or in-service capacity of the well. "Annual" rights refer to the cumulative withdrawal allowed during a calendar year. The "Supplemental" rights are established, usually as annual rights, when the owner has more than one water source. A supplemental right may only be used by diminishing withdrawals from other sources by an equal amount.

The formula to determine the amount of water to reserve for future public water supply is:

Reservation amount = future demand - existing water rights

However, this computation is unsatisfactory in Island County. Existing rights on Camano and Whidbey Islands would allow a total "instantaneous withdrawal rate" of 27,639 gpm (39.8 MGD) and 17,929 acre-feet annually (16.0 MGD average). This is in excess of the year 2040 projected water demands of 39.0 MGD (peak day) and 13.8 MGD (average day).

There are inherent problems in using "paper" water rights for anything other than to describe the possible maximum legal appropriations that can be made under the water rights. Some of the problems are:

(a) Certificates of water rights have often been issued in amounts that exceed the withdrawal capacity actually developed.

(b) Numerous rights are unused and even some of those totally abandoned have never been relinquished so the right is still technically an active appropriation.

(c) Originally developed capacities have diminished due to system deficiencies or source deterioration.

(d) Applications for new permits have sometimes been filed rather than changing an existing water right.

(3) In-Service System Capacities as Database for Reservation Petition

In some areas, use of in-service system capacities as a database for a reservation petition (or to identify long-term water supply deficits) has been adequate. This is not the case in Island County.

Based on DOH records for Class 2, 3, and 4 public water supply systems and a combination of DOH records and data reported by R. W. Beck for Class 1 systems, the in-service capacities of public water supply systems on Camano and Whidbey Islands are estimated as follows:

	In-Service System Capacity (gpm) Whidbey	Camano
Class 1	7,104	1,902
Class 2	8,197	3,827
Class 3	671	238
Class 4	5,818	1,318
Subtotal	21,790	7,285
County Total	29,075 gpm (41.9 MGD)	

The numbers shown above must be qualified by recognizing that the information was obtained from utilities, principally through the annual Water Facilities Inventory submitted to DOH. The reported capacities were not verified. Some of the sources reported in the questionnaire may be for secondary or emergency use and may not be feasible to use as a primary source of supply.

The reported system capacity total in Island County (41.9 MGD) is fairly close to the recorded instantaneous water rights for public supply (39.8 MGD) and exceeds the projected peak day demand in the year 2040. Source capacity, and therefore instantaneous rights, should be approximately determined by peak day use. In Section III, the 1985 total peak day domestic demand was estimated at 15.5 MGD, which includes individual household wells, and the demand which is satisfied by the Oak Harbor supply system.

For comparative purposes, the relationship between the installed system capacity, instantaneous water right authorization, and peak day usage in 1986 (see Table D-2) for Class 1 systems on Camano and Whidbey Islands is shown as follows:

	Camano		Whidbey	
	GPM	MGD	GPM	MGD
Installed Capacity	1,902	2.74	7,104	10.22
Water Rights (Inst.)	1,715	2.47	6,645	9.57
Peak Day Usage (1986)	458	.66	3,673	5.29

It is not certain why the in-service capacity so exceeds peak demand. However, it seems likely that a significant capacity is installed, but not usable, either through quantity or quality limitations.

D. Summary Statement and Recommendations

Based on projected demands for public water supply in Island County through the year 2040, an additional 9,296 acre-feet of water annually (average 8.3 MGD) and a system capacity of 23.5 MGD more than is presently being delivered will be required.

On a County-wide basis, there apparently is sufficient groundwater available to accommodate the above requirements. However, there are major problems associated with its development. From a purely technical perspective, it appears a combination of increased water importation in conjunction with additional groundwater development and conservation would best serve the needs of Island County.

A Reservation Petition is not recommended. This is because there do not appear to be any imminent conflicts between public water suppliers and other user group categories in Island County. Also, a reservation of groundwater would not, at this time, alleviate the most significant water supply problems.

Water right records do not accurately depict water use in the County and water use data are, in general, poor.

Avoidance of any increase in saltwater intrusion should be a high priority goal in Island County. Monitoring requirements outlined in the DOH/ICHD Seawater Intrusion Policy will provide needed data for ongoing management of this problem.

A comprehensive groundwater management program is essential to not only protect the groundwater resources of Island County, but to assure proper development of the resource. The appropriate mechanism for establishing this is through the ongoing groundwater management planning efforts. Some specific areas that should be addressed are:

(1) The construction of all new wells should be subject to an evaluation of impacts of proposed withdrawals, prior to construction.

(2) The above includes wells upon which no water right permit is presently required (i.e. withdrawal of 5,000 gallons per day or less). This could be achieved by County ordinance, regulations by the DOH or Ecology, or by a combination of all three. A proposed County Ordinance requiring all groundwater uses to be registered is being considered by the Ground Water Advisory Committee.

(3) Special rules for new development should apply to areas of existing or potential saltwater intrusion. More detailed (local area specific) geohydrologic investigations and monitoring programs are needed in such areas. The ICHD and DOH currently administer a Salt Water Intrusion Policy for public water system groundwater development. The policy establishes three categories of saline contamination risk. The policy further establishes standard requirements for water systems within each risk category. Purveyors should become familiar with the monitoring requirements as outlined in the policy, and voluntarily begin monitoring.

(4) New methods of funding resource investigations and regional-type water supply projects should be sought. For example, in areas of existing saltwater intrusion, the existing users (all of whom can be assumed to contribute to the problem) should participate in financing a program that will stabilize the situation. Possible financing could include funding of construction through a County Public Works Department ULID process, formation of an Aquifer Protection District with user fees collected on all groundwater users, and programs developed by water utility districts or Regional Water Associations.

(5) A system of coordinated data management should be developed so local utilities or other public water suppliers, County, DOH, and Ecology can all work from a common (and consistent) data base.

In addition to the above, it is recommended that the individual public water supply entities and RWAs increase their efforts in the following areas, at a minimum:

(1) Attain a better knowledge of the water source presently being used and the capabilities or limitations of their supply systems.

(2) Confirm and refine long-term demand projections.

(3) Work with Ecology (DOH, as necessary) to assure that water right records are in order. For example, if a water right is not being used and there is no intent to put the system back in service, the right should be relinquished.

(4) Eliminate wastage and encourage conservation and metering of sources and service connections. The State health agencies (DOH and Ecology) should be requested to provide public education

assistance and specific information on the effectiveness of conservation options. A comprehensive conservation program should be developed and implemented as part of the Island County Ground Water Management Plan.

TABLE VI-1

EXAMPLE 1990 BUDGET FOR COUNTY PUBLIC WORKS DEPARTMENT

REVENUES - To be determined

EXPENDITURES

Administration-General

534.10	110	Salaries/Wages	$66,900.00
534.10	120	Benefits	18,100.00
534.10	135	Small Tools/Minor Equipment	2,000.00
534.10	142	Communications	600.00
534.10	143	Travel	500.00
534.10	145	Operating Rents/Leases	4,200.00
534.10	146	Insurance	400.00
534.10	164	Machinery/Equipment	6,000.00
		TOTAL General Administration	$98,700.00

Customer Services & Marketing

534.70	131	Office/Operating Supplies	$ 3,000.00
534.70	143	Travel	1,100.00
534.70	144	Advertising	2,000.00
534.70	149	Miscellaneous	5,200.00
		TOTAL Customer Services/Marketing	$11,300.00

TOTAL EXPENDITURES $110,000.00

The following assumptions were made to arrive at the proposed budget figures:

Salaries & Wages & Benefits

Engineer	$28,000.00
Engineering Tech II	21,600.00
Administrative Assistant II	17,300.00
	66,900.00
Benefits @ 27%	18,100.00
TOTAL SALARIES/WAGES/BENEFITS	$85,000.00

Small Tools/Minor Equipment

3 Desks @ 500 each	$1,500.00
3 Telephones	150.00
Miscellaneous	350.00
Total Small Tools/Equipment	$2,000.00
Communications @ $50 for 12 months	$ 600.00
Operating Rents/Leases--2 offices @ 175/month	$4,200.00

Machinery/Equipment

2 computers/software @ 2,500 each	$5,000.00
1 typewriter	1,000.00
	$6,000.00

Miscellaneous includes printing costs.

TABLE VI-2

SUMMARY OF CLASS 1 SYSTEMS
IN-SERVICE CAPACITY AND WATER RIGHTS(1)

	In-Service Capacity(2)		Water Rights	
	GPM	MGD	Ins. (MGD)(3)	AF/YR
CAMANO ISLAND				
Camaloch Assn.	1,030	1.48	.58	40
Camano Coop Water & Power	265	.38	.32	Unk.
Camano Island State Park	Unk.	Unk.	.10	20
Camano Water Assn.	346	.50	1.15	336
Madronna Beach Comm. Water System	200	.29	.22	127.5
New Utsalady Water System	61	.09	.10	110
Subtotal (Camano Island)	1,902	2.74	2.47	633.5(3) (.56 MGD Avg.)
WHIDBEY ISLAND				
Admiral's Cove, Inc.	546	.79	.57	66
Chateau St. Michelle	28	.04	Unk.	Unk.
Clinton Water District	390	.55	.21	212
Coupeville, City of	325	.47	1.40	688
Crockett Lake Water District	118	.17	.17	90
Crosswoods Water Co.	100	.14	.17	86
Dugualla Comm. Inc.	420	.60	Unk.	Unk.
Ft. Ebey State Park	14	.02	Unk.	Unk.
Freeland Water Dist.	270	.39	.36	168
Hillcrest Village Water Co.	320	.46	.45	370
Lagoon Point W.D.	360	.52	.16	192
Langley, City of	830	1.20	.72	301
NAS Whidbey	368	.52	Unk.	Unk.
Northgate Terrace	280	.40	.24	210.5
Oak Harbor	540	.78	3.01	3,346
Parkwood Manor MHP	120	.18	.07	80
Penn Cove W.D.	300	.44	.14	88
Rolling Hills Glencairn Comm. Ser. 1	230	.34	.17	184
Sandy Hook Yacht Club Estates	182	.26	.28	64
Saratoga Water, Inc. (4)	60	.08	Unk.	Unk.

TABLE VI-2 continued

	In-Service Capacity(2)		Water Rights	
	GPM	MGD	Ins. (MGD)(3)	AF/YR
Scatchet Head W.D.	425	.61	.31	241.1
Sea View Water Co.	260	.37	.14	65
Sierra Country Club, Inc.	90	.13	.14	150
South Whidbey State Park	19	.03	.03	10
W.B. Waterworks No. 1	225	.33	.64	150
Whidbey Water Systems	284	.40	.19	34
Subtotal (Whidbey Island)	7,104	10.22	9.57	6,795.6(5) (6.07 MGD Avg.)
TOTAL (Both Islands)	9,006	12.96	12.04	7,429.1 (6.63 MGD Avg.)

Footnotes:

(1) Class 1 systems have more than 100 services.

(2) In-service capacity represents water systems that are equipped and on-line. The figures reflect the reported maximum amount of water than can be taken from the water source on an instantaneous basis by the pumping system. It does not indicate source yield nor does it indicate how long the systems can operate at the maximum rate. Because capacity figures for this table have primarily been taken from the data of R.W. Beck and Associates, some of the figures are at variance with those listed in the water right listing in Appendix E.

(3) Ins. (MGD) is a conversion of the water right authorization in gallons per minute (gpm) into MGD.

(4) Saratoga Water, Inc. indicates they have a claim to water right in the amount of 120 gpm (0.17 MGD).

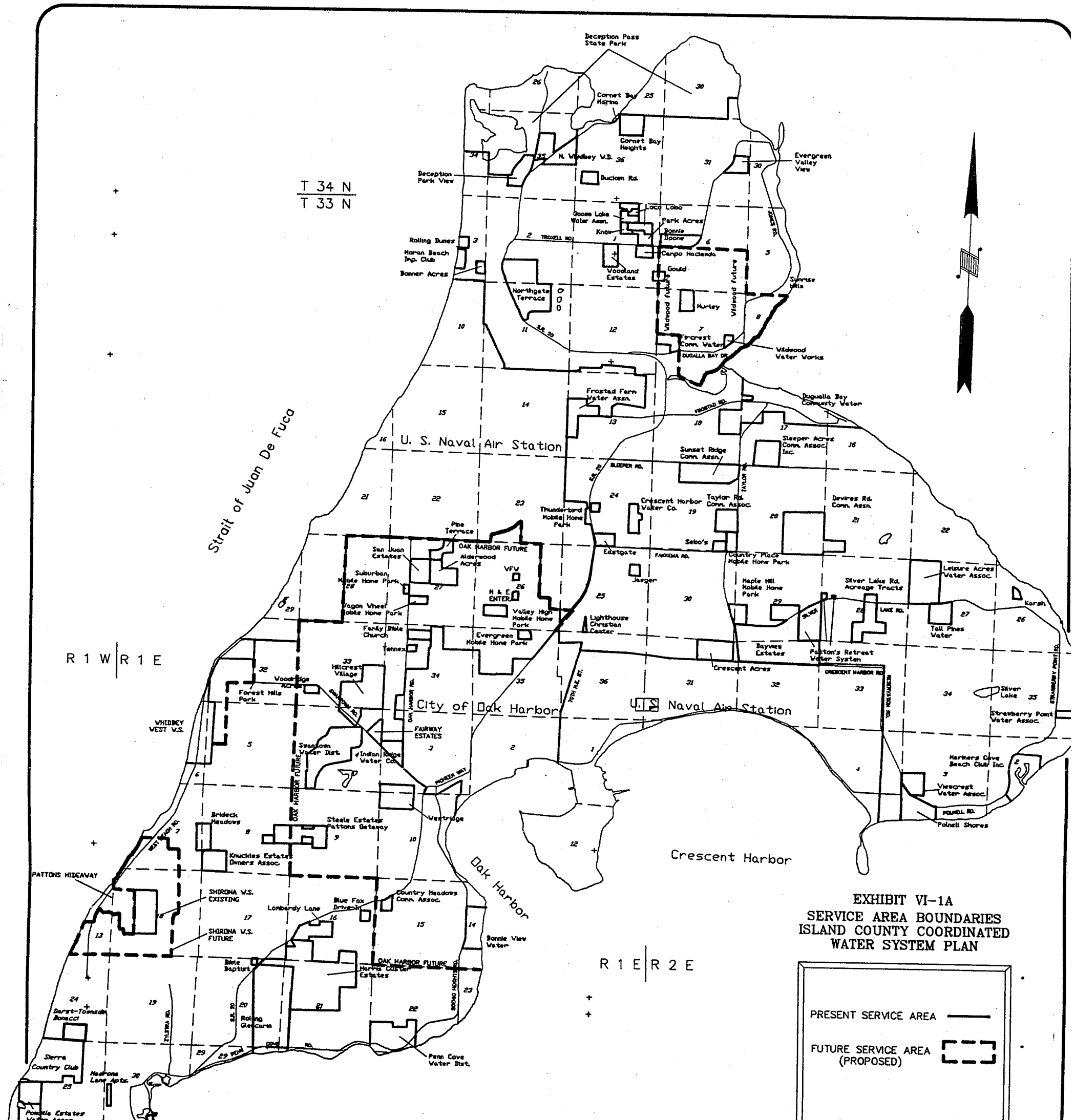


EXHIBIT VI-1A
SERVICE AREA BOUNDARIES
ISLAND COUNTY COORDINATED
WATER SYSTEM PLAN

PRESENT SERVICE AREA ——

FUTURE SERVICE AREA (PROPOSED) - - -

DECEMBER 1989

EXHIBIT VI-1A
SERVICE AREA BOUNDARIES
ISLAND COUNTY COORDINATED
WATER SYSTEM PLAN

NOTE: RETAIL SERVICE AREAS AS PROPOSED BY WATER PURVEYORS ON OR BEFORE JANUARY 1, 1990. SUBJECT TO REVISION.

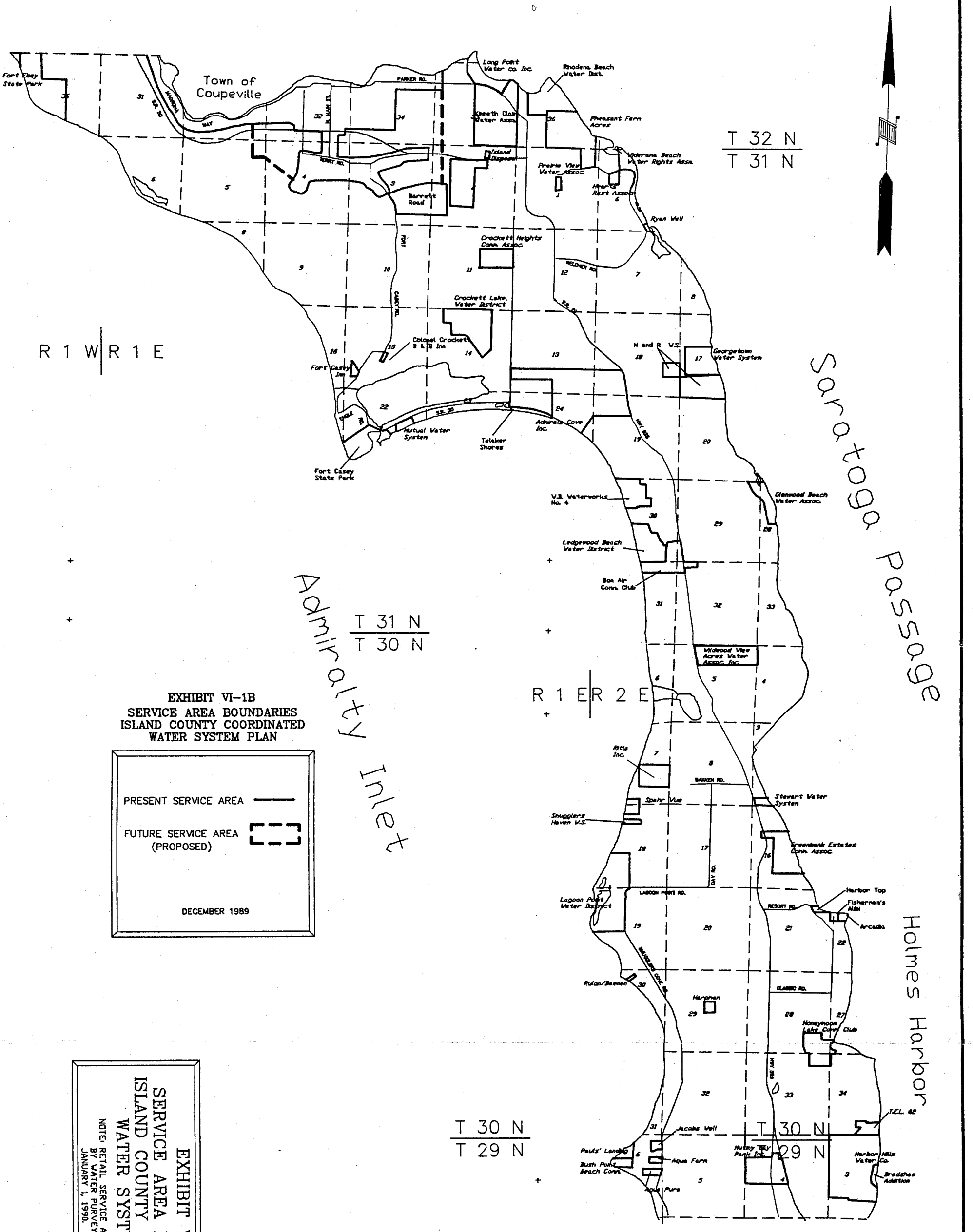


EXHIBIT VI–1B
SERVICE AREA BOUNDARIES
ISLAND COUNTY COORDINATED
WATER SYSTEM PLAN

PRESENT SERVICE AREA ——

FUTURE SERVICE AREA (PROPOSED) - - -

DECEMBER 1989

EXHIBIT VI–1B
SERVICE AREA BOUNDARIES
ISLAND COUNTY COORDINATED
WATER SYSTEM PLAN

NOTE: RETAIL SERVICE AREAS AS PROPOSED BY WATER PURVEYORS ON OR BEFORE JANUARY 1, 1990. SUBJECT TO REVISION.

R 2 E | R 3 E

T 30 N
T 29 N

T 29 N
T 28 N

Holmes Harbor

Whidbey Shores
H.E. Eisenbach
Saratoga Beach Owner's Assoc.
4 Corners
Saratoga Water Inc.
Beverly Beach WA
Brainer Rd.
Skyline West
Gross Lake Park Community Club
City of Langley
Eaglecrest
Pinewood Community Club
Inglewood Park
GLA Assoc.
V.B. Waterworks # 2
Adams Rd Water System
Skewes Lane Water Assn.
Southern V.S.
Harbor Shores
Freeland Water Dist.
Windmill Hgts Community Club
Del Bay
Mutiny Sands
Tara
Menlo Beach
V.B. Waterworks #1
Palmers Mutiny Bay
Misty Meadows
Glocrest
Mutiny View Manor
Lancaster Hgts
Jehovahs Witness
Bayview Meadows W.S.
Bayview Beach Water District
Barr Bungalow
Barr Community
Admiralty Pt. Water System
Useless Bay Shores
Staats Hgts Water Assoc.
Longwood Water Assoc.
Pioneer Park WS
Lone Lk. Shores Community Cl.
Morgan's Exxon
S. Whid. Elem. - N. Campus
Church of JCLDS
S. Whid. Elem. S. Campus
S. Whidbey HS
T.E.L. #8
Davis Indust.
Delong W.S.
JD Groon
V.B. Waterworks # 3
Campbell Glen
Deer Lake Estates
Clinton Water District
Mitt's W.S.
Wades Grove
Highland Meadows
Cascade View Rd.
Hoonwink
Chrystal Springs
Summit View Community Assoc.
Glendale
T.E.L. #6
Scatchet Head Water District
Sandy Hook Yacht Club
Hilltop Owners Assoc.

EXHIBIT VI-1C
SERVICE AREA BOUNDARIES
ISLAND COUNTY COORDINATED
WATER SYSTEM PLAN

PRESENT SERVICE AREA ——

FUTURE SERVICE AREA (PROPOSED) - - -

DECEMBER 1989

EXHIBIT VI-1C
SERVICE AREA BOUNDARIES
ISLAND COUNTY COORDINATED
WATER SYSTEM PLAN

NOTE: RETAIL SERVICE AREAS AS PROPOSED BY WATER PURVEYORS ON OR BEFORE JANUARY 1, 1990. SUBJECT TO REVISION.

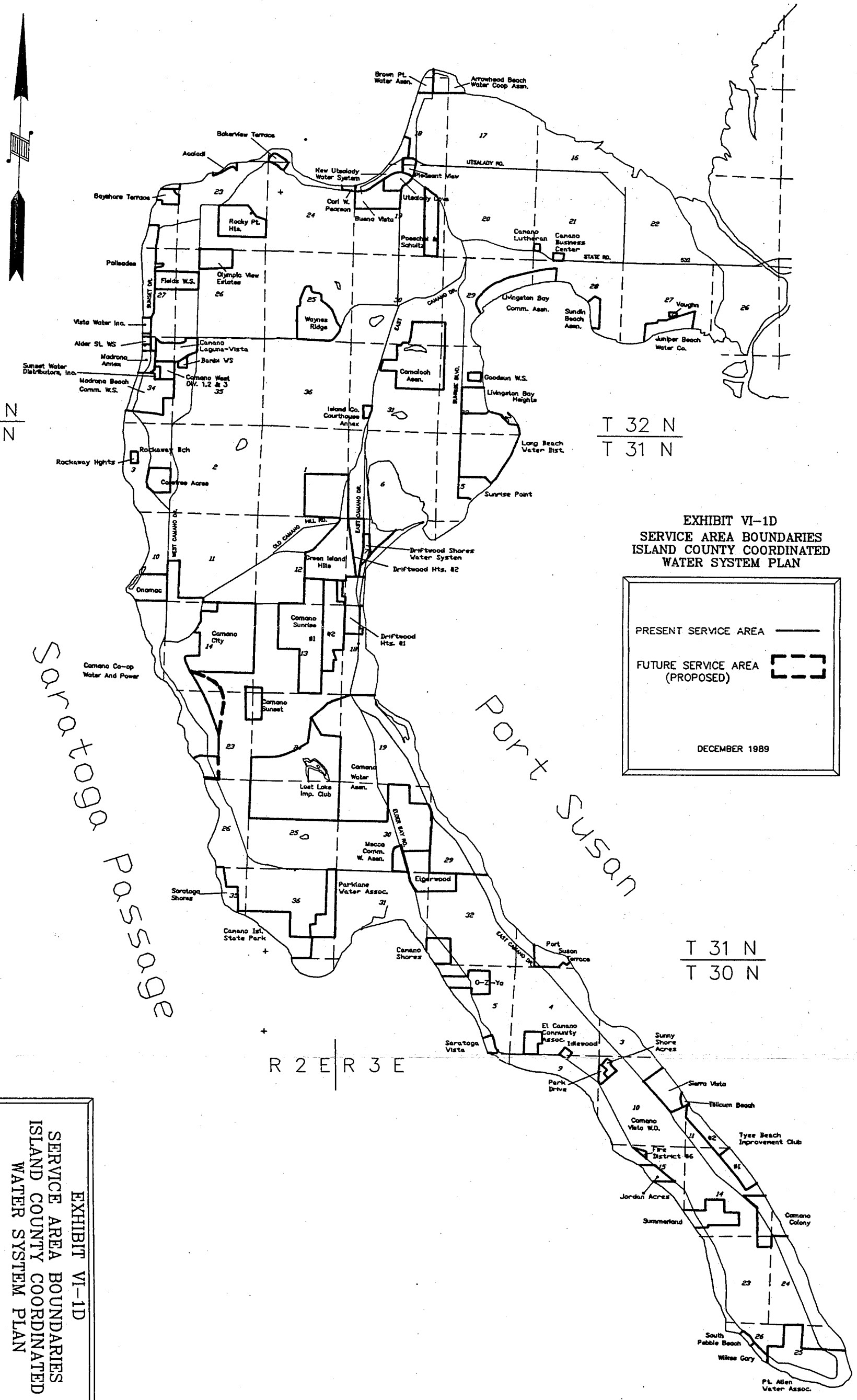


EXHIBIT VI-1D
SERVICE AREA BOUNDARIES
ISLAND COUNTY COORDINATED
WATER SYSTEM PLAN

PRESENT SERVICE AREA

FUTURE SERVICE AREA (PROPOSED)

DECEMBER 1989

EXHIBIT VI-1D
SERVICE AREA BOUNDARIES
ISLAND COUNTY COORDINATED
WATER SYSTEM PLAN

NOTE: RETAIL SERVICE AREAS AS PROPOSED BY WATER PURVEYORS ON OR BEFORE JANUARY 1, 1990. SUBJECT TO REVISION.

EXHIBIT VI-2

AGREEMENT FOR ESTABLISHING WATER UTILITY SERVICE AREA BOUNDARIES IN THE ISLAND COUNTY CRITICAL WATER SUPPLY SERVICE AREA

Pursuant to the Public Water System Coordination Act (Chapter 70.116 RCW) and related action of the Board of Island County Commissioners (BICC Resolution No. PD-85-07), a Coordinated Water System Plan (CWSP) is being developed for Island County. As a part of this Plan, Section 70.116.070 requires that service area boundaries of public water systems be established. The purpose of this Agreement is to comply with the provisions of this Act with respect to the water service area boundaries of the undersigned utility.

Whereas, authority for this Agreement is granted by the Public Water System Coordination Act of 1977, Chapter 70.116 RCW.

WHEREAS, such an Agreement is required in WAC 248-56-730, Service Area Agreements-Requirement, of the Public Water System Coordination Act;

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

WHEREAS, definite future service areas will facilitate efficient planning for, and provision of, water system improvements within Island County as growth occurs; and

WHEREAS, definite water utility planning areas will help assure that water reserved for public water supply purposes will be utilized in the future in an efficiently planned manner.

NOW, THEREFORE, the undersigned utility, having entered into this Agreement by signature of its authorized representative(s), concurs with and will abide by the following provisions:

1. Service Area Boundaries. The undersigned utility acknowledges that the portion of the Island County Master Service Area Map, as of the date of this Agreement, accurately identifies the water system's service area, including planned-for expansion. This signed Agreement verifies that a good faith effort has been made by the undersigned to identify future service areas of near and adjacent water systems and that no service area conflicts are known.

2. Boundary Adjustments. If, at some time in the future, it is in the best interest of the County and the undersigned utility to make service area boundary adjustments, such modifications must have the written concurrence of any other utilities whose boundaries are affected by the modification, and proper legislative authority(ies), and must be noted and filed with the County and DOH.

This Agreement shall become effective once this document is approved, as specified in WAC 248-56-730.

IN WITNESS WHEREOF, the undersigned utility has executed this Agreement as of _____.

_____
Water Utility

_____
Representative

_____
Title

Receipt Acknowledged:

_____
Island County Planning Department

_____
Date

DEVELOPER FILES APPLICATION FOR PERMIT WITH ISLAND COUNTY

PRELIMINARY REVIEW BY I.C.H.D.

APPLICATION SPECIFIES CONNECTION TO A PRIVATE WELL

PRIVATE WELL CONNECTION DENIED

APPLICATION SPECIFIES CONNECTION TO EXISTING MAIN WITHIN A UTILITY'S PRESENT SERVICE AREA

I.C.H.D. REVIEWS UTILITY SERVICE CAPACITY

APPLICATION REQUEST SPECIFIES LOCATION AND SERVICE REQUIREMENTS FOR PUBLIC WATER SUPPLY

APPLICANT IS INFORMED OF CWSP PROVISIONS COVERING NEW WATER SERVICE

APPLICATION REQUEST FALLS WITHIN DESIGNATED SERVICE AREA OF WATER UTILITY

NO

YES

APPLICANT/UTILITY/GOVERNMENT REVIEW ALL ASPECTS OF REQUESTS FOR NEW WATER SERVICE AND CONDITIONS OF SERVICE PROPOSED BY UTILITY

APPLICANT UNWILLING TO ACCEPT UTILITY PROPOSAL FOR WATER SERVICE

APPLICANT AGREES TO PROPOSAL FOR WATER SERVICE

1

APPLICANTS APPEAL UPHELD

APPEAL TO PEER GROUP

UTILITY POSITION UPHELD

2

APPEAL TO HEARING EXAMINER

3

APPEAL TO BICC

4

APPEAL TO SUPERIOR COURT SYSTEM

DESIGNATED UTILITY UNABLE OR UNWILLING TO PROVIDE WATER SERVICE

APPLICANT MAY PURSUE OTHER OPTIONS

APPLICATION REQUEST IS CLOSE TO OR WITHIN SERVICE RANGE OF AN ADJACENT WATER UTILITY

NO

YES

APPLICATION REQUIRES NEW SYSTEM

APPLICANT/UTILITY/GOVERNMENT REVIEW ALL ASPECTS OF REQUESTS FOR NEW WATER SERVICE. PROPOSAL OFFERED BY APPLICANT

APPLICANT AND UTILITY AGREE TO CONDITIONS COVERING NEW WATER SERVICE

APPLICANT AND/OR UTILITY UNABLE TO REACH AGREEMENT FOR NEW WATER SERVICE

APPLICANT AGREES TO SSMA OPERATION OF NEW SYSTEM

APPLICANT DEMONSTRATES PERMANENT CAPABILITY TO MANAGE WATER WATER SYSTEM

PREQUALIFIED SSMA SELECTED BY APPLICANT

NEW UTILITY FORMED TO OPERATE NEW SYSTEM

OWNERSHIP OF SYSTEM TRANSFERRED TO SSMA

PRELIMINARY APPROVAL BASED ON PRIVATE WELL(S)

APPLICANT DECLINES PUBLIC WATER SERVICE & REQUESTS PRIVATE WELL APPROVAL

APPROVAL DENIED

UTILITY CERTIFIES AVAILABILITY OF WATER SERVICE

COMPLIANCE WITH CWSP PLANNING AND MINIMUM DESIGN REQUIREMENTS

SERVICES AREAS ADJUSTED AS APPROPRIATE

UTILITY OBTAINS WATER RIGHT PERMIT. WATER SYSTEM DESIGN APPROVED BY DOH AND/OR I.C.H.D.

PRELIMINARY APPROVAL OF SITEPLAN, PLAT, SHORT PLAT, OR PRD

UTILITY AND DEVELOPER ENTER INTO CONTRACT. SYSTEM INSTALLED AND INSPECTED OR BONDED IN ACCORDANCE WITH UTILITY SERVICE CERTIFICATE

FINAL PERMIT APPROVAL

EXHIBIT VI-3

ISLAND COUNTY CWSP
UTILITY SERVICE REVIEW PROCEDURE

LEGEND

BICC = BOARD OF ISLAND COUNTY COMMISSIONERS
ICHD = ISLAND COUNTY HEALTH DEPARTMENT
SSMA = SATELLITE SYSTEM MANAGEMENT AGENCY
DOH = DEPARTMENT OF HEALTH

ECONOMIC AND ENGINEERING SERVICES, INC.

EXHIBIT VI-4

CERTIFICATE OF WATER SERVICE AVAILABILITY

Applicant Name: _____.
Project Name: _____.
Designated Water System: _____.
Water System Owned By: _____.

WATER SUPPLY TO THE PROPOSED PROJECT IS FROM:

A. _____ Extension of mains connected to an existing system

B. _____ Installation of a water system owned by an existing purveyor

C. _____ Installation of a water system owned by the applicant, but managed by another purveyor: _____.

D. _____ Creation of a new purveyor to install and manage a water system

IF THE PROPOSED NEW SERVICE IS NOT WITHIN AN APPROVED SERVICE AREA, THE FOLLOWING MUST BE COMPLETED:

Identify Other Purveyors to Which an Application for Service was Made

Purveyor Name	Person Contacted	Telephone
_____	_____	_____.
_____	_____	_____.
_____	_____	_____.

ACKNOWLEDGEMENT BY THE APPLICANT:

I, the undersigned, certify that the above information is true and correct.

Signature: _____ Date: _____.

Print Name: _____.

ACKNOWLEDGEMENT BY THE PURVEYOR:

We, the undersigned purveyor, certify that the Applicant listed above has submitted an application for water service in accordance with our customer policy, and we have discussed our conditions and terms with the Applicant. Subject to successful negotiation of a legal contract, not included herein, we are willing to assume full operational and maintenance responsibility for the proposed new water service.

Signature: _____ Title: _____.

Print Name: _____ Date: _____.

SECTION VII

REGIONAL WATER SUPPLY PLAN

1. INTRODUCTION

This Section evaluates the new water supply facilities that will likely be required to meet the future requirements of Whidbey and Camano Islands. The facilities evaluation is based on the population and water use projections developed in other sections of the Coordinated Water System Plan (CWSP). The forecasts are made for years 2000 and 2015 planning horizons.

The discussion proceeds with the identification of areas that will likely be developed to levels justifying public water systems for each of the planning horizons. In some areas, groundwater resources are expected to be inadequate to meet future demands. Possible water sources originating outside Island County are identified as potential sources to the water-short areas.

This Section also discusses the feasibility of importation of off-island water supply to either Whidbey or Camano Islands. These plans are based upon consideration of available alternatives. Potential service to water-short areas includes a water supply extension from the Oak Harbor/Anacortes supply system to serve central Whidbey Island and a system connecting to Stanwood to serve northeastern Camano Island. The plans also discuss opportunities for interties and shared facilities and suggest implementation and financing methods.

2. FUTURE WATER SERVICE AREAS

A discussion of probable future water service areas for Island County for the years 2000 and 2015 follows and is derived from the projected future growth and water supply needs, excluding agricultural, mining, and other non-domestic uses, presented in Section III and the Ground Water Resource Evaluation (Appendix K).

Exhibits VII-1 and VII-2 show projected water service planning areas in Island County for the years 2000 and 2015, respectively. A water service planning area indicates a region where the growth and future population density are expected to be sufficient to justify a community water system. A water service planning area does not imply a designated retail service area for a single system. Several water systems may operate within each of these areas.

Each of the water service planning areas has been given a name for reference purposes. Usually the name relates to some geographical feature within the water service area. Sometimes this is the same name as a significant water system that currently operates within the particular area. This does not imply that this system will become solely responsible for supplying the area.

Tables VII-1 and VII-2 summarize projected population and water use information for each region and for the water service areas in 2000 and 2015, respectively. The projected population is based on the growth rates for each region as given by the Planning Department projections discussed in Section III. Seasonal population has also been indicated. The choice of the Planning Department projections and seasonal population gives a "high" projection which is conservative as a water supply need.

The estimated 1985 population for the water service planning areas is primarily based on the detailed survey of water systems conducted by the Island County Health Department for the Preliminary Assessment as the prerequisite for the CWSP. This is supplemented by other available information obtained during CWSP preparation. This information included estimates of the seasonal and permanent population served by the existing systems.

Water use is estimated by an average usage of 100 gallons per capita per day and maximum daily water use of 250 gallons per capita. Tables VII-1 and VII-2 indicate whether a concern for groundwater availability is expected for the year 2015 planning horizon. The groundwater resource estimates are not precise, but a range was developed in the Ground Water Resource Analysis (Appendix K, Table K-1) to guide planning for potential supply. Tables VII-1 and VII-2 indicate a concern for groundwater availability when the conservative (low) estimate of additional replenishment is exceeded by the projected growth of supply requirement.

The proposed future water service areas are discussed below for the year 2000 and 2015 planning levels.

A. Year 2000 Service Planning Areas (see Exhibit VII-1)

(1) Northern North Whidbey

North Whidbey - Currently, a Class 3 water system is the primary purveyor in this area. Its source of supply is a tap on the Oak Harbor supply line. The logical future supply could include commercial development in the immediate vicinity, the Deception Pass State Park facilities in the Cornet Bay area, and various other small residential water systems. The primary advantage to

extending water service is the dependability of the source of supply. Existing groundwater sources could be used to supplement the Oak Harbor supply.

Central Northern North Whidbey - Several water systems currently supply water in the highlands of this subregion. Future growth would logically suggest coordinated water system planning to provide adequate water supply for this area.

Northgate Terrace - A Class 1 water system in this area is somewhat isolated from other major developments. The system is currently served by groundwater sources. However, its proximity to the Oak Harbor supply lines suggests the opportunity for additional supply from other than groundwater sources. The location is also ideal for supplying water to the surrounding area as it develops.

(2) Eastern North Whidbey

Dugualla - On the south side of Dugualla Bay, groundwater sources appear to be adequate for the immediate growth. The Oak Harbor supply lines are approximately 1 mile away and accessible if necessary.

Silverlake - There are several water systems within this service area. Most of these lie on the beach facing Saratoga Passage. The Silverlake Water Company lies at the top of a hill in this subregion and has extended its mains such that it could easily supply the systems along the beach. Its groundwater supplies are sufficiently inland to avoid saltwater intrusion. Systems in the Eastern North Whidbey area typically have low yields (3-15 gpm) and slow recovery rates. It appears there is a need for off-Island water to supply this area.

(3) Southwestern North Whidbey

Oak Harbor and the Whidbey Naval Air Station/Seaplane Base are served by the Anacortes water system and wells. Oak Harbor plans to continue to extend its water service area to encompass the future service area boundary shown on Exhibit VII-1. There are several existing water systems which are included in the planned future service area of the City, and which could benefit from a dependable source of good quality supply.

West Beach - There are several water systems along the west coast of Whidbey Island starting at the southern boundary of the Naval Air Base and extending south to Fort Ebey State Park. Oak Harbor's Comprehensive Water Plan does not include this area within its future water service area although it is sufficiently close that it could feasibly be served, if necessary. Several of the existing systems have emergency interties.

(4) Northern Central Whidbey

This area is already short of water and could supplement its supply by extending a pipeline south from Oak Harbor to make the Anacortes supply available. However, this option may not be consistent with Island County's Land Use Plan.

Penn Cove and Rolling Hills Glenncairn - These Class 1 water systems most likely will remain independent and will serve future growth with their existing sources, although they experience some quality problems. If a pipeline is extended from Oak Harbor to Coupeville, these systems could connect to the pipeline as a primary or alternative supply.

Coupeville - This municipal system currently serves an area on the south side of Penn Cove. The future service area possibly includes extensions to the east and the west along Penn Cove. Coupeville has recently developed several shallow wells to meet its immediate needs, but has quality problems with two of its wells and difficulty obtaining enough groundwater for projected needs.

Systems on the west coast of Whidbey Island due west of Penn Cove could also be served if the water supply pipeline from Oak Harbor is constructed. One system, Sierra Country Club, is known to have severe water quality problems and is experiencing salt water intrusion. Groundwater resources appear to be very limited in this area and a pipeline from Oak Harbor and the Anacortes system may be required to serve future growth.

Crockett Lake Water District and Admirals Cove - These systems will most likely remain independent and supply new customers within their existing service area with their present sources of supply. Water supply by extension of the Coupeville system is also a longer term option, assuming Coupeville connects to the Anacortes/Oak Harbor supply.

(5) Southern Central Whidbey

Ledgewood and Greenbank - There are several adjacent water systems in this area which would benefit from coordinating water supply and system development.

Lagoon Point - The Lagoon Point subdivision system is a Class 1 water system, which is remote from other systems. Future growth will likely be within the existing service area and will be supplied by the existing source.

Bush Point and W&B Water Company - This area includes several water systems along the Mutiny Bay shoreline, Bush Point, and Double Bluff. The W&B Water Company (W&B No. 1) has extended its water system extensively in the Double Bluff and Mutiny Bay areas to provide domestic service and fire protection. While the majority of the users have connected to the W&B system, there are some who have elected not to be served by W&B and continue to maintain their homeowner association water systems.

Freeland Water District - This system currently serves the community of Freeland. The present source is adequate to serve the demands of future growth. Some extension of the service area along the shore of Holmes Harbor is possible. The storage tank in the system is located so as to facilitate extension of the service area to the south in the future. An intertie or integration of the system with those along Mutiny Bay would also be a logical development in the future.

Bayview/Whidbey City - There are several water systems along the north end of Useless Bay. Two systems were recently consolidated into the Bayview Water District. Interties with other systems in this area in the future would be beneficial.

The Bayview commercial area is currently served by a number of small systems lacking fire flow capabilities. The Island County Engineering Department is conducting a planning effort to coordinate the development of a regional water system with fire flow capabilities to provide service to the area.

(6) Southeastern South Whidbey

Langley - The Langley municipal water system is a significant supplier of water to its incorporated limits and some surrounding areas. The system is isolated from other systems although an intertie with the Clinton system is possible.

Clinton - The Clinton Water District is the second largest water system on South Whidbey Island, being nearly as large as Langley. The system's future service area encompasses several small systems and there are opportunities for shared facilities or consolidation of systems.

Scatchet Head and Possession Point - These two subdivisions are each served by water systems installed for the plats. The distance to other systems and the presence of good producing wells probably indicate these systems will remain independent in the near future. Future growth will probably be within the developments served by these systems.

(7) Camano Island

Southern Camano - Several developments currently exist on the southern finger of Camano Island. The water systems that serve these developments already experience significant water shortage and saltwater intrusion problems. The Ground Water Resource Evaluation (see Tables VII-1 and VII-2) indicates water may be available to serve the area although it will be necessary to drill a number of low yield wells along the ridge of the Island in order to develop the groundwater.

Northern Camano - The water systems on Northern Camano Island serve platted subdivisions or older shoreline developments. Many of these systems are clustered such as along Utsalady Bay or in the northeastern corner of the Island.

The Ground Water Resource Evaluation indicates the water supply may be marginal. Juniper Beach and some other areas are experiencing saltwater intrusion and other water quality problems.

Future water service areas where there are a number of water systems offer opportunities for interconnection and/or shared facilities. It is feasible to construct a water transmission pipeline to import water from Stanwood to the northeast sector of the Island. This construction can be phased and could eventually be extended to other areas of the Island. There are some recharge

areas so that groundwater may be adequate on portions of North Camano. Groundwater could be pumped into a transmission system and blended with imported water. Although the construction of facilities for transmission of off-island supply may be feasible, it may not be entirely consistent with the Comprehensive Land Use Plan.

B. Year 2015 Service Areas

Projections of areas that may be served water by the Year 2015 appear on Exhibit VII-2. Since this is a long-term projection, it is difficult to forecast with accuracy the future service areas. It is assumed there will be a growing together of some of the service areas, offering new opportunities for interties, shared facilities or consolidation of water systems.

The projected average and peak water use for the year 2015 are shown in Table VII-3. The same areas will have inadequate groundwater supplies, as in the year 2000, and the situation will become more acute. In addition, if the Langley and Clinton areas of South Whidbey continue to grow as projected, they could begin to experience water shortages by the year 2015.

3. REGIONAL WATER SUPPLY ALTERNATIVES

Water supply on Island County is dependent almost entirely on local groundwater because there are no significant streams or other surface water sources. The Ground Water Resource Analysis conducted as part of this CWSP identified that the groundwater may be inadequate to meet present and/or projected water demands in some areas of Whidbey and Camano Islands. Locally, poor water quality such as high iron, saltwater intrusion, high dissolved solids, or aesthetic problems due to color, taste, or odor can be a problem.

One of the goals of the Island County CWSP and the associated Ground Water Management Plan (GWMP) is to identify the water resources available within Island County and to maximize their use for meeting the domestic municipal and industrial water requirements within the County, prior to consideration of mainland water resources. Population increases should be consistent with the Comprehensive Plan. A growth management strategy should be used to preserve and protect indigenous groundwater resources. Continuing evaluation of off-island supply should be considered in a timely fashion so the County is prepared with adequate alternatives if existing supplies approach exhaustion.

The Island County Comprehensive Water and Sewer Plan, prepared in 1968, identified potential regional sources of water supply to Whidbey and Camano Islands. Following the completion of that study, a water supply pipeline was

constructed from the Anacortes water system to serve Oak Harbor and the Whidbey Island Naval Air Station on North Whidbey Island. A number of other water system developments have occurred which affect water supply potential to Island County. Factors such as new materials and technologies, changes in the relative and absolute cost of alternatives, changes in water quality criteria, as well as legislative and institutional changes, also influence the evaluation of these sources.

The following sources were identified as possible future supplies to Whidbey and/or Camano Islands:

- o Conservation
- o Redistribution
- o Anacortes water system
- o Everett water system
- o Stanwood water system
- o The Stillaguamish River

Table VII-4 lists these, and other alternatives, and provides some estimates of quantities involved for purposes of supply alternatives planning. These were evaluated by reviewing available reports; discussions with water utilities personnel; discussion with a representative of Snohomish County Public Utility District which has authority to supply water on Camano Island; and, discussion with the Department of Ecology (Ecology) which has the responsibility for issuing water rights and allocating the State's water resources.

Each of the alternatives is discussed below (conservation is discussed in Section V). Exhibit VII-3 shows the location of the off-island sources and existing water supply pipelines.

A. Redistribution

Redistribution of groundwater is an option to relocate drinking water from areas in which groundwater resources exceed local needs to nearby areas where groundwater quality or quantity is below acceptable standards. The Ground Water Advisory Committee may identify regions in which the potential for localized redistribution exists. A water purveyor interested in redistributing groundwater must apply and receive water rights from Ecology, applicable franchises from Island County, and water system design approval from the Department of Health (DOH) or Island County Health Department (ICHD).

Care must be taken not to underestimate the local needs of the area from which the water will be exported. Consideration of future land use potential will limit the quantity of water available for distribution. Careful study will be required before it can be determined which areas, if any, have additional supplies available for redistribution.

B. Anacortes Water System

The City of Anacortes operates a regional water supply system that draws its supply from the Skagit River at Avon near Mount Vernon. The system consists of the water supply intake, a water filtration plant, and water transmission pipelines that carry the water approximately 12 miles to the City of Anacortes. The City supplies several major wholesale and industrial customers in addition to its own needs. These include the Town of LaConner, the Dewey-Similk Beach areas served by Skagit County Public Utility District, the Shell and Texaco refineries on March Point, Whidbey Island Naval Air Station and Seaplane Base, and the City of Oak Harbor. Parallel 10-inch and 24-inch-diameter pipelines connect to the Anacortes system at Dean's Corner near March Point and extend south across Fidalgo Island to Whidbey Island.

Oak Harbor owns the 24-inch pipeline and the section of the 10-inch pipeline from the Deception Pass bridge to its terminus. The 10-inch pipeline was originally installed by the U.S. Navy about 1942 and terminates at the Naval Air Station. The 24-inch pipeline was installed by the City of Oak Harbor in the early 1970s in cooperation with the Naval Air Station. The pipeline extends to the City of Oak Harbor and terminates at the City's pumping station near the main gate to Ault Field.

The City of Anacortes has water rights on the Skagit River totaling 85 cfs (i.e., 54.9 MGD). In addition, the City has requested the transfer of groundwater withdrawal rights originally used by the City's Ranney wells at the location of the City's water filtration plant to surface water rights. This transfer would increase the City's total water rights to 74.4 MGD.

Average daily water use for Anacortes and its wholesale and industrial customers is currently approximately 12 million gallons daily (MGD). The estimated maximum daily water use is approximately 18 MGD and peak instantaneous demand approximately 21 MGD. By comparison, the capabilities of the Anacortes water supply system are summarized below.

	Existing Nominal Capacity (MGD)	Existing Maximum Capacity (MGD)	Expanded Maximum Future Capacity (MGD)
Water Treatment Plant:			
Intake Pumping	33	33	55
Flocculation/Sedimentation:			
Basin and Filters	20	30	60
High Head Pumps	35	30	55
Water Transmission Lines	33	30	46

The existing facilities have more capacity than is required to serve present demands. The treatment facilities were originally constructed to permit future expansion when required. The expanded maximum capacity is shown in the final column above. The future capacity is estimated based on increasing pumping capacity including installing a booster pump in the water transmission pipeline and expanding the flocculators and filters at the filtration plant. Further expansion would require major expansion of the intake and treatment plant, and paralleling the transmission pipelines.

The City of Anacortes operates its water supply system as a regional resource. Table VII-3 summarizes the existing and projected water use in the Anacortes system. The projections were developed for the year 2000 and the year 2015 beginning with the actual use by the City's customers in 1987. Future water use for Oak Harbor and the Naval Air Station have been excerpted from the City's recent comprehensive water plan. The projected use for the potential future service to Whidbey Island is based on population and water use estimates developed later in this section.

The Anacortes system has capacity to deliver additional water to Whidbey Island. The projected water demands shown in Table VII-3 are probably high for Whidbey Island so it is expected, considering all of its water requirements, that Anacortes will be able to meet its demands until about the year 2000 with its present supply system. The existing water supply pipeline to Oak Harbor will be able to supply the additional demands on Whidbey Island as far south as Coupeville in the short-term. When required by future growth, a booster pump could be installed in the Oak Harbor pipeline. For still more capacity, a new parallel pipeline would need to be constructed from the connection point with the Anacortes system at Dean's Corner, south across Fidalgo Island, and then down Whidbey Island.

C. Everett Water System

The City of Everett operates a large water supply system utilizing the Sultan River. The original dam on the Sultan River was constructed in the early 1960s and has recently been raised and improved in order to provide hydroelectric power and increased water supply. The following is information on the capabilities of the City of Everett water system, as reported by water system staff:

- Safe yield of source - 600 MGD
- Intake capacity - 230 MGD
- Water treatment - 50 MGD average/100 MGD peak
- Installed transmission capacity - 170 MGD

The City plans improvements to its transmission pipelines that will further increase capacity. When justified by increasing demands, the City will expand its water treatment plant to 100 MGD average capacity with a peak capacity of 150 MGD.

The City of Everett serves its residents, major industry in the City, and a number of cities and water districts in southern Snohomish County. The municipal supply is treated at the filtration plant, but much of the industrial water is supplied without treatment.

The City reports that the use by its treated water system customers currently averages 34 MGD with peak demands of 97 MGD. The City also has an obligation to deliver 30 MGD of untreated water to Scott Paper Company, with an option for an additional 20 MGD. Scott's current usage is approximately 28 MGD. It has declined somewhat in recent years.

The City of Everett system has excess capacity and has long been viewed as a potential regional water supply to other areas in Snohomish County. Several studies have been conducted regarding the feasibility of transporting City of Everett water to Marysville, Arlington, and other areas in northern Snohomish County. The most recent study, the North Snohomish County Regional Water Plan, was sponsored by the Tulalip Indian Tribes, in cooperation with the other water purveyors and interested agencies. This study investigated alternative pipeline routes to deliver up to 30 MGD of water supply in the future to the north County areas.

The first phase of the water system development to North Snohomish County would be included as part of a resource recovery project being proposed on Tribal lands near the Boeing test site south of the 116th Street interchange off I-5. This project would include the construction of

a 36-inch-diameter pipeline from the City of Everett north to the resource recovery project, including a 10-million-gallon terminal reservoir near the incinerator site.

The City of Everett appears interested and willing to supply water to Island County. This is probably not economically feasible in the near future because of the distances and costs involved in transporting water from the Everett system to Island County. A submarine pipeline from Everett to south Whidbey Island is possible although South Whidbey should be able to rely on its groundwater resources for the short-term and the cost of constructing the underwater pipeline would probably be prohibitive at the present population levels and water demands.

If the Everett system is extended to serve northern Snohomish County, the supply could conceivably be extended to Camano Island. It appears, however, that supply from Stanwood may be a more viable short-term solution.

D. Stanwood Water System

The Town of Stanwood is located immediately to the east of Camano Island. Discussions with representatives from the Town of Stanwood indicated the Town has supply capable of delivering approximately 3.6 MGD of maximum demand. These consist of the following sources:

	Capacity (gpm)	Capacity (MGD)
Bryant Well Nos. 1 and 2	2,100	3.0
Hat Slough Spring	350	0.5
Fure Well	40	0.1
Total	2,490	3.6

The Town serves Twin City Foods, a large food processing industry which is a seasonal customer requiring high demands during the summer months and modest demands during the balance of the year. The maximum daily demand on the system during the summer is on the order of 3.5 MGD, with Twin City Foods accounting for approximately 2.5 MGD of this demand. The maximum system demands are considerably less than 1 MGD during the remaining 9 months of the year.

All of the sources are operated year-round with the wells supplementing Hat Slough Springs. The water table at the Bryant Wells is drawn down during the summer but recovers during the winter when demands are

lower. There is one additional well source not shown above, the Sill Well which has a yield of approximately of 400 gallons per minute but which is not used because it has a high hydrogen sulfide content.

In discussions with the Town of Stanwood staff, the personnel expressed interest in supplying water to Camano Island but also expressed some concern about committing to additional water customers. The feeling was that the Town has just enough water to meet its peak summer demand at the present time and that it must look after its own customers first before considering any extensions. There was also concern about creating a precedent for other areas outside of the Town of Stanwood water service area if water service was extended to Camano Island.

The Town is currently in the process of making improvements to its water system. The Town recently constructed two new reservoirs to replace the leaking Bailey tanks. Also, the Town is in the process of updating its comprehensive water plan which will include an evaluation of treatment to correct the hydrogen sulfide problem in the Sill Well, possible redevelopment of the Fure Well to increase its capacity, and new well sources. It would be helpful if Stanwood would consider northeastern Camano Island's water requirements in updating its comprehensive water plan.

If the Stanwood system develops an additional source, it may be able to supply water to Northeast Camano Island. The previous owner of the system believes that the Hat Slough springs is capable of an additional 100 gpm and that it is currently limited by the 6-inch pipeline from the Spring to the Town of Stanwood. Also, the Fure well reportedly draws from the same aquifer as the Bryant Well Nos. 1 and 2 and there is the likelihood that it could be redeveloped to improve its capacity. The Sill Well is reportedly a good producer and was tested at 600 gpm. If the Sill Well is to be used as a production well, additional hydrogen sulfide treatment may be required.

Snohomish County Public Utility District provides electric power to Camano Island. Normally, a public utility district is authorized to operate only within the county in which it is formed (i.e., Snohomish County) but can serve outside of the county if authorized by an election of the residents in the area to be served. The voters on Camano Island approved electric service from the Snohomish County PUD. The PUD interprets this vote as also allowing it to provide water service, if requested by the local residents. The PUD currently provides water service to the Lake Stevens vicinity and another small water system in Snohomish County. The PUD has an interest in water supply, sponsored a satellite water system study some years ago, and as a result of that study

has conducted feasibility studies for providing water service to a number of rural communities. To date, the May Creek system near Gold Bar is the only system that has actually been developed and put into operation.

Snohomish County PUD has been approached regarding developing a water system on North Camano Island. The system would use a well developed on the Island County Camano Annex property as a source of supply for the surrounding commercial development. Initial discussions with the water manager for Snohomish County Public Utility District indicated an interest in providing water service on Camano Island. If the Town of Stanwood were willing to sell the water, the PUD could provide a transmission and/or distribution service.

In summary, it appears the Stanwood water system has capacity plus the potential for more source development and could supply some water to Camano Island. If the City implemented source improvements, and assuming the Twin City Foods demands do not increase, the Town may be able to supply up to 1 MGD of water to Camano Island.

E. Stillaguamish River

The Stillaguamish River discharges to Port Susan Bay near Stanwood. Like the Skagit and Sultan rivers, it rises in the Cascade Mountains and drains the western slopes. It has not been dammed for water supply and/or hydroelectric development as have the other two rivers, so the flow is not controlled and the summer low flows are more extreme than in the other two rivers. The River's water is heavily appropriated for agricultural and municipal purposes. The City of Marysville has a Ranney well system that draws water from the River as its source of supply.

Ecology is in the process of evaluating the minimum stream flow requirements for the State's rivers and the level of withdrawals that can be permitted while still maintaining this minimum flow. This affects all rivers that might provide future water supply to Island County. It is particularly critical for the Stillaguamish River, however, because water to serve Island County would require a new water rights appropriation on this already heavily used river.

Assuming that water supply is available, it could be diverted at Silvana, transported to Camano Island, and possibly to Whidbey Island, if economically feasible. Below Silvana, the river quality could be influenced by salt water. A water filtration plant would need to be constructed to treat the water.

F. Desalination

The treatment of brackish or salt water in Island County is a possible alternative to importing a water supply. Technically, this solution is possible although it is expensive, and desalted water is not as palatable as natural supplies. The Town of Coupeville installed an electro-dialysis type of water treatment plant in the 1970s to reduce the total dissolved solids from its well sources. The facility is in use, but has high operation and maintenance costs and because the "brine" that is formed by concentrating the solids must be wasted, this results in wasting of approximately 30 percent of the scarce source of supply.

Desalination is expensive, ranging from $2 to $5 per 1,000 gallons of treated water. It may have some local application within the County but is not considered feasible as a regional source of supply within the near future.

In summary, the Anacortes/Oak Harbor water supply and the Stanwood water system appear to be possible future water supply sources for portions of Whidbey and Camano Islands, respectively. These sources are further considered in the Whidbey Island/Camano Island Water Implementation Plan (see Appendix M).

G. Alternative Methods

Alternative methods for developing water resources should be considered whenever possible. Methods such as reuse of grey water, or the use of stormwater and wastewater for irrigation, may provide significant reductions in withdrawal of water resource volume. However, technical aspects of alternative methods must be reviewed and approved by the appropriate review authority prior to consideration.

4. SHARED FACILITIES PLAN

In addition to the possible regional water supply systems to serve Central Whidbey Island and the northeast sector of Camano Island, which have already been discussed, there are other opportunities for shared facilities in Island County. As already identified, most of the areas in Island County are expected to continue to rely on local groundwater as a source of supply during the planning horizon covered by the CWSP. The geographic distribution of the groundwater resources and the clustering of existing and future development within the County forms service areas which, in many cases, are served by several different systems. This offers the opportunity for joint development or sharing of source, and storage, or intertie facilities.

A. Source

Exhibits VII-4 and VII-5 identify possible shared facilities for the years 2000 and 2015, respectively. The existing water system facilities within each of the identified future water service areas were reviewed to estimate the water supply potential. Where additional source of supply appears necessary, the amount of the deficiency for each of the years is shown on the respective exhibits. The criteria used is the anticipated maximum daily demand (based on 250 gallons per capita per day).

It is suggested that in future service areas where additional source of supply is required, that the systems within the existing service areas consider opportunities for sharing or jointly developing these future facilities. It could result in the need to develop fewer wells or in some instances where the local groundwater supply will be inadequate, it will help to justify a connection to the Oak Harbor or one of the proposed regional water supply systems. Other benefits of joint facilities can be an improved level of water service and decreased water costs.

It is beyond the scope of this CWSP to prepare detailed cost estimates for potential joint source development. This will require careful evaluation by the water systems involved to come up with a proposed plan.

B. Storage

The anticipated amount of additional storage that will be required within the water service areas by the years 2000 and 2015 is also shown on Exhibits VII-4 and VII-5. This analysis is based on providing 800 gallons per customer per day which is the requirement of DOH for water systems. In estimating the amount of additional storage that will be required, we reviewed the existing system storage within each of the service areas. In some instances, reservoirs that are of questionable condition were not considered in evaluating the existing storage capacity. The storage requirements shown in Exhibits VII-4 and VII-5 are total additional requirements for 2000 and 2015, respectively.

A detailed evaluation of the cost of storage reservoirs is beyond the scope of this CWSP. However, in order to provide some perspective on the storage cost, the following is a tabulation of cost for reservoirs of typical sizes that might be constructed in Island County.

Capacity (MG)	Cost (1)
0.25	$220,000 - $ 320,000
0.50	300,000 - 520,000
1.00	575,000 - 775,000
2.00	900,000 - 1,300,000

(1) Includes 40 percent indirect costs.

The costs will depend on the reservoir shape, type of construction, and a number of other factors. The above costs do not include an allowance for any significant length of pipeline that may be required to connect the reservoir to a water system.

C. Interconnections

It appears there are a number of opportunities for interties between systems in Island County as the population and customer base increase. Potential interties are as shown on Exhibit VII-5 and are described in Table VII-5. In some instances, these interties are within water service areas and in other instances, they connect between different water service areas. The letter designation for each of the interties cross-references the exhibit and table.

Table VII-5 provides some outline information on these potential interties. In many cases, they will become a significant or primary supply to all or portions of the water service areas due to the limited groundwater resources. In some instances, they will be the standby or backup intertie between two water service areas that are expected to be relatively self-sufficient. In other instances, the intertie, in addition to providing supply for standby capability will provide a primary transmission/distribution loop and/or facilitate future extension of the water system. In all cases, the interties should increase reliability of the water systems.

The approximate lengths, diameters, and cost estimates should be viewed as general information to provide some perspective on the cost of the facilities. It should be kept in mind that it is not necessary, in many cases, to construct the full length of the intertie at one time, but that the construction could be phased. The minimum diameter shown is a judgment based on the purpose of the intertie and the configuration of water systems. In the case of a standby interconnection, a 6-inch diameter pipeline may be sufficient to provide emergency support. Where the intertie will serve as a primary source of supply, it is suggested that a minimum of 8-inch diameter pipeline be used. Where the intertie

also will provide a "backbone" pipeline through the water system to deliver municipal supply and to provide fire protection a larger pipeline may be justified in some instances.

D. Implementation

The implementation of shared water system facilities will require organization and a lead agency. The recommendations in the coordinated water system plan includes shared facilities through Regional Water Associations. These committees can help the water systems to initiate their plans. The County may be able to assist the systems in attaining funding and support and could provide administrative expertise to the water systems.

The development of shared facilities could be implemented in a variety of ways and may depend on the size and cost of the proposed facilities. In the case of an intertie that provides a regular or standby supply from one system to another, it could be as simple as the second system paying the water rates charged by the supplying system. Cities and water/sewer districts have the ability to extend water lines to provide service and could agree to do this for some of the interties proposed. In the case of shared storage or a pipeline that interties and gives benefit to several systems an interlocal agreement might be appropriate or a separate district could be set up to finance the proposed water system improvements. The district approach may be necessary if the water systems are informal associations in order to provide a governmental entity that can issue bonds and incur debt. Also, an applicant for public grant or loan assistance usually must be a public agency in order to qualify for aid.

The ICPW may be able to assist the systems in obtaining funding and support, and could provide technical and administrative expertise to the water systems.

TABLE VII-1

POPULATION AND WATER USE PROJECTIONS FOR WATER SUPPLY AREAS - YEAR 2000
(SEE EXHIBIT VII-1)

REGION: NORTH WHIDBEY
1985 TOTAL POPULATION: 29,440
POPULATION, YEAR 2000: 47,600
AVERAGE USAGE, GPCD: 100
PEAK USAGE, GPCD: 250

FUTURE SUPPLY AREA(1)	SUPPLY AREA DESCRIPTION	1985 POPULATION	2000 POPULATION	AVERAGE USAGE (2) 1985 USAGE GPD	AVERAGE USAGE (2) 2000 USAGE GPD	AVERAGE USAGE (2) INCREASE IN USAGE GPD	AVERAGE USAGE (2) PROJECT USAGE EXCEEDS ESTIMATED REPLENISHMENT	PEAK USAGE (2) 1985 PEAK USAGE GPD	PEAK USAGE (2) 2000 PEAK USAGE GPD	PEAK USAGE (2) INCREASE IN PEAK USAGE GPD
SUBAREA:	NORTHERN NORTH WHIDBEY									
1.	North Whidbey Water	500	808	50,000	81,000	31,000		125,000	202,000	77,000
2.	Central Northern N. Whidbey	284	459	28,400	46,000	17,600		71,000	115,000	44,000
3.	Northgate Terrace	647	1,046	64,700	105,000	40,300		161,750	262,000	100,250
	SUBAREA TOTALS	1,431	2,313	143,100	232,000	88,900	NO	357,750	579,000	221,250
SUBAREA:	EASTERN NORTH WHIDBEY									
4.	Dugualla	385	622	38,500	62,000	23,500		96,250	156,000	59,750
5.	Silverlake	750	1,213	75,000	121,000	46,000		187,500	303,000	115,500
	SUBAREA TOTALS	1,135	1,835	113,500	183,000	69,500	NO	283,750	459,000	175,250
SUBAREA:	SOUTHWESTERN NORTH WHIDBEY									
6.	Naval Air Base	7,400	11,965	740,000	1,197,000	457,000		1,850,000	2,991,000	1,141,000
7.	Oak Harbor	14,275	23,081	1,427,500	2,308,000	880,500		3,568,750	5,770,000	2,201,250
8.	West Beach	874	1,413	87,400	141,000	53,600		218,500	353,000	134,500
9.	Penn Cove	506	818	50,600	82,000	31,400		126,500	205,000	78,500
	SUBAREA TOTALS	6	37,277	2,305,500	3,728,000	1,422,500	YES	5,763,750	9,319,000	3,555,250
REGION TOTALS FOR PUBLIC SUPPLY (4)		25,621	41,425	2,562,100	4,143,000	1,580,900		6,405,250	10,357,000	3,951,750

(1) Future supply areas are identified by familiar area names and do not necessarily imply an expansion of water system by the same name. Future supply areas are shown in Exhibits VII-1 and VII-2.
(2) Projections are based on public domestic supply only and do not include agriculture, mining, and other uses.
(3) See Appendix K, Groundwater Resource Evaluation. Concern is indicated where the projected increase in average usage exceeds the low estimate of unappropriated replenishment given in Table K-1.
(4) Estimate does not include individual wells and water systems outside of projected supply areas.

TABLE VII-1

POPULATION AND WATER USE PROJECTIONS FOR WATER SUPPLY AREAS - YEAR 2000
(SEE EXHIBIT VII-1)

REGION: CENTRAL WHIDBEY
1985 TOTAL POPULATION: 9,880
POPULATION, YEAR 2000: 15,300
AVERAGE USAGE, GPCD: 100
PEAK USAGE, GPCD: 250

FUTURE SUPPLY AREA(1)	SUPPLY AREA DESCRIPTION	1985 POPULATION	2000 POPULATION	AVERAGE USAGE (2) 1985 USAGE GPD	AVERAGE USAGE (2) 2000 USAGE GPD	AVERAGE USAGE (2) INCREASE IN USAGE GPD	AVERAGE USAGE (2) PROJECT USAGE EXCEEDS ESTIMATED REPLENISHMENT	PEAK USAGE (2) 1985 PEAK USAGE GPD	PEAK USAGE (2) 2000 PEAK USAGE GPD	PEAK USAGE (2) INCREASE IN PEAK USAGE GPD
SUBAREA:	NORTHERN CENTRAL WHIDBEY									
10.	Rolling Hills Glenncairn	450	697	45,000	70,000	25,000		112,500	174,000	61,500
11.	Coupeville	2,020	3,128	202,000	313,000	111,000		505,000	782,000	277,000
12.	Crockett Lake	278	431	27,800	43,000	15,200		69,500	108,000	38,500
13.	Admirals Cove	362	561	36,200	56,000	19,800		90,500	140,000	49,500
	SUBAREA TOTALS	3,110	4,817	311,000	482,000	171,000	YES	777,500	1,204,000	426,500
SUBAREA:	SOUTHERN CENTRAL WHIDBEY									
14.	Ledgewood	545	844	54,500	84,000	29,500		136,250	211,000	74,750
15.	Greenbank	251	389	25,100	39,000	13,900		62,750	97,000	34,250
16.	Lagoon Pt.	429	664	42,900	66,000	23,100		107,250	168,000	58,750
17.	Bush Pt.	800	1,239	80,000	124,000	44,000		200,000	310,000	110,000
	SUBAREA TOTALS	2,025	3,136	202,500	313,000	110,500	YES	506,250	784,000	277,750
	REGION TOTALS FOR PUBLIC WATER SUPPLY (4)	5,135	7,953	513,500	795,000	281,500		1,283,750	1,988,000	704,250

(1) Future supply areas are identified by familiar area names and do not necessarily imply an expansion of water system by the same name. Future supply areas are shown in Exhibits VII-1 and VII-2.
(2) Projections are based on public domestic supply only and do not include agriculture, mining, and other uses.
(3) See Appendix K, Groundwater Resource Evaluation. Concern is indicated where the projected increase in average usage exceeds the low estimate of unappropriated replenishment given in Table K-1.
(4) Estimate does not include individual wells and water systems outside of projected supply areas.

TABLE VII-1

POPULATION AND WATER USE PROJECTIONS FOR WATER SUPPLY AREAS - YEAR 2000
(SEE EXHIBIT VII-1)

REGION: SOUTH WHIDBEY
1985 TOTAL POPULATION: 13,550
POPULATION, YEAR 2000: 21,200
AVERAGE USAGE, GPCD: 100
PEAK USAGE, GPCD: 250

FUTURE SUPPLY AREA(1)	SUPPLY AREA DESCRIPTION	1985 POPULATION	2000 POPULATION	AVERAGE USAGE (2) 1985 USAGE GPD	AVERAGE USAGE (2) 2000 USAGE GPD	AVERAGE USAGE (2) INCREASE IN USAGE GPD	AVERAGE USAGE (2) PROJECT USAGE EXCEEDS ESTIMATED REPLENISHMENT	PEAK USAGE (2) 1985 PEAK USAGE GPD	PEAK USAGE (2) 2000 PEAK USAGE GPD	PEAK USAGE (2) INCREASE IN PEAK USAGE GPD
SUBAREA:	NORTHWESTERN SOUTH WHIDBEY									
18.	V & B Water Co.	374	585	37,400	59,000	21,600		93,500	146,000	52,500
19.	Freeland	750	1,173	75,000	117,000	42,000		187,500	293,000	105,500
20.	Bayview Beach	925	1,447	92,500	145,000	52,500		231,250	362,000	130,750
21.	Saratoga Water Co.	400	626	40,000	63,000	23,000		100,000	157,000	57,000
22.	Saratoga Beach Owners Assn.	450	704	45,000	70,000	25,000		112,500	176,000	63,500
	SUBAREA TOTALS	2,899	4,535	289,900	454,000	164,100	NO	724,750	1,134,000	409,250
SUBAREA:	SOUTHEASTERN SOUTH WHIDBEY									
23.	S. Whidbey Commercial Area	325	508	32,500	51,000	18,500		81,250	127,000	45,750
24.	Langley	1,750	2,738	175,000	274,000	99,000		437,500	685,000	247,500
25.	Clinton	1,500	2,347	150,000	235,000	85,000		375,000	587,000	212,000
26.	Scatchet Head	425	665	42,500	67,000	24,500		106,250	166,000	59,750
27.	Possession Pt.	600	939	60,000	94,000	34,000		150,000	235,000	85,000
	SUBAREA TOTALS	4,600	7,197	460,000	721,000	261,000	NO	1,150,000	1,800,000	650,000
	REGION TOTALS FOR PUBLIC WATER SUPPLY (4)	7,499	11,732	749,900	1,175,000	425,100		1,874,750	2,934,000	1,059,250

(1) Future supply areas are identified by familiar area names and do not necessarily imply an expansion of water system by the same name. Future supply areas are shown in Exhibits VII-1 and VII-2.
(2) Projections are based on public domestic supply only and do not include agriculture, mining, and other uses.
(3) See Appendix K, Groundwater Resource Evaluation. Concern is indicated where the projected increase in average usage exceeds the low estimate of unappropriated replenishment given in Table K-1.
(4) Estimate does not include individual wells and water systems outside of projected supply areas.

TABLE VII-1

POPULATION AND WATER USE PROJECTIONS FOR WATER SUPPLY AREAS - YEAR 2000
(SEE EXHIBIT VII-1)

REGION: CAMANO ISLAND
1985 TOTAL POPULATION: 11,380 AVERAGE USAGE, GPCD: 100
POPULATION, YEAR 2000: 17,200 PEAK USAGE, GPCD: 250

FUTURE SUPPLY AREA(1)	SUPPLY AREA DESCRIPTION	CURRENT POPULATION	PROJECTED POPULATION	AVERAGE USAGE (2) 1985 USAGE GPD	AVERAGE USAGE (2) 2000 USAGE GPD	AVERAGE USAGE (2) INCREASE IN USAGE GPD	AVERAGE USAGE (2) PROJECT USAGE EXCEEDS ESTIMATED REPLENISHMENT	PEAK USAGE (2) 1985 PEAK USAGE GPD	PEAK USAGE (2) 2000 PEAK USAGE GPD	PEAK USAGE (2) INCREASE IN PEAK USAGE GPD
SUBAREA:	SOUTHERN CAMANO									
28.	South Camano	900	1,360	90,000	136,000	46,000	NO	225,000	340,000	115,000
SUBAREA:	NORTHERN CAMANO									
29.	Camano Water Assn.	1,400	2,116	140,000	212,000	72,000		350,000	529,000	179,000
30.	Camano Coop.	1,100	1,663	110,000	166,000	56,000		275,000	416,000	141,000
31.	Driftwood	375	567	37,500	57,000	19,500		93,750	142,000	48,250
32.	Camaloch	400	605	40,000	61,000	21,000		100,000	151,000	51,000
33.	Madrona Beach	925	1,398	92,500	140,000	47,500		231,250	350,000	118,750
34.	Utsalady Bay	1,475	2,229	147,500	223,000	75,500		368,750	557,000	188,250
35.	Livingston Bay	580	877	58,000	88,000	30,000		145,000	219,000	74,000
	SUBAREA TOTALS	3,755	5,676	375,500	569,000	193,500	NO	938,750	1,419,000	480,250
	REGION TOTALS FOR PUBLIC WATER SUPPLY (4)	5,455	8,246	545,500	826,000	280,500		1,363,750	2,061,500	697,750

(1) Future supply areas are identified by familiar area names and do not necessarily imply an expansion of water system by the same name. Future supply areas are shown in Exhibits VII-1 and VII-2.
(2) Projections are based on public domestic supply only and do not include agriculture, mining, and other uses.
(3) See Appendix K, Groundwater Resource Evaluation. Concern is indicated where the projected increase in average usage exceeds the low estimate of unappropriated replenishment given in Table K-1.
(4) Estimate does not include individual wells and water systems outside of projected supply areas.

TABLE VII-2

POPULATION AND WATER USE PROJECTIONS FOR WATER SUPPLY AREAS - YEAR 2015
(SEE EXHIBIT VII-2)

REGION: NORTH WHIDBEY
1985 TOTAL POPULATION: 29,440 AVERAGE USAGE, GPCD: 100
POPULATION, YEAR 2015: 65,930 PEAK USAGE, GPCD: 250

FUTURE SUPPLY AREA(1)	SUPPLY AREA DESCRIPTION	1985 POPULATION	2015 POPULATION	AVERAGE USAGE (2) 1985 USAGE GPD	AVERAGE USAGE (2) 2015 USAGE GPD	AVERAGE USAGE (2) INCREASE IN USAGE GPD	PROJECT USAGE EXCEEDS ESTIMATED REPLENISHMENT	PEAK USAGE (2) 1985 PEAK USAGE GPD	PEAK USAGE (2) 2015 PEAK USAGE GPD	PEAK USAGE (2) INCREASE IN PEAK USAGE GPD
SUBAREA:	NORTHERN NORTH WHIDBEY									
1.	North Whidbey Water	1,480	3,314	148,000	331,000	183,000		370,000	829,000	459,000
2.	Hope Harbor	70	157	7,000	16,000	9,000		17,500	39,000	21,500
	SUBAREA TOTALS	1,550	3,471	155,000	347,000	192,000	NO	387,500	868,000	480,500
SUBAREA:	EASTERN NORTH WHIDBEY									
3.	Central East North Whidbey	995	2,228	99,500	223,000	123,500		248,750	557,000	308,250
4.	Dugualla	685	1,534	68,500	153,000	84,500		171,250	384,000	212,750
5.	Silverlake	890	1,993	89,000	199,000	110,000		222,500	498,000	275,500
	SUBAREA TOTALS	2,570	5,755	257,000	575,000	318,000	NO	642,500	1,439,000	796,500
SUBAREA:	SOUTHWESTERN NORTH WHIDBEY									
6.	Naval Air Base	7,400	16,572	740,000	1,657,000	917,000		1,850,000	4,143,000	2,293,000
7.	Oak Harbor	15,875	35,552	1,587,500	3,555,000	1,967,500		3,968,750	8,888,000	4,919,250
	SUBAREA TOTALS	23,275	52,124	2,327,500	5,212,000	2,884,500	YES	5,818,750	13,031,000	7,212,250
REGION TOTALS FOR PUBLIC SUPPLY (4)		27,395	61,350	2,739,500	6,134,000	3,394,500		6,848,750	15,338,000	8,489,250

(1) Future supply areas are identified by familiar area names and do not necessarily imply an expansion of water system by the same name. Future supply areas are shown in Exhibits VII-1 and VII-2.
(2) Projections are based on public domestic supply only and do not include agriculture, mining, and other uses.
(3) See Appendix K, Groundwater Resource Evaluation. Concern is indicated where the projected increase in average usage exceeds the low estimate of unappropriated replenishment given in Table K-1.
(4) Estimate does not include individual wells and water systems outside of projected supply areas.

TABLE VII-2

POPULATION AND WATER USE PROJECTIONS FOR WATER SUPPLY AREAS - YEAR 2015
(SEE EXHIBIT VII-2)

REGION: CENTRAL WHIDBEY
1985 TOTAL POPULATION: 9,880 AVERAGE USAGE, GPCD: 100
POPULATION, YEAR 2015: 20,730 PEAK USAGE, GPCD: 250

FUTURE SUPPLY AREA(1)	SUPPLY AREA DESCRIPTION	1985 POPULATION	2015 POPULATION	AVERAGE USAGE (2) 1985 USAGE GPD	AVERAGE USAGE (2) 2015 USAGE GPD	AVERAGE USAGE (2) INCREASE IN USAGE GPD	PROJECT USAGE EXCEEDS ESTIMATED REPLENISHMENT	PEAK USAGE (2) 1985 PEAK USAGE GPD	PEAK USAGE (2) 2015 PEAK USAGE GPD	PEAK USAGE (2) INCREASE IN PEAK USAGE GPD
SUBAREA:	NORTHERN CENTRAL WHIDBEY									
8.	Rolling Hills Glenncairn	450	944	45,000	94,000	49,000		112,500	236,000	123,500
9.	Coupeville	2,950	6,190	295,000	619,000	324,000		737,500	1,548,000	810,500
	SUBAREA TOTALS	3,400	7,134	340,000	713,000	373,000	YES	850,000	1,784,000	934,000
SUBAREA:	SOUTHERN CENTRAL WHIDBEY									
10.	Ledgewood	840	1,762	84,000	176,000	92,000		210,000	441,000	231,000
11.	Lagoon Pt.	440	923	44,000	92,000	48,000		110,000	231,000	121,000
12.	Bush Pt.	900	1,888	90,000	189,000	99,000		225,000	472,000	247,000
	SUBAREA TOTALS	2,180	4,573	218,000	457,000	239,000	YES	545,000	1,144,000	599,000
REGION TOTALS FOR PUBLIC SUPPLY (4)		5,580	11,707	558,000	1,170,000	612,000		1,395,000	2,928,000	1,533,000

(1) Future supply areas are identified by familiar area names and do not necessarily imply an expansion of water system by the same name. Future supply areas are shown in Exhibits VII-1 and VII-2.
(2) Projections are based on public domestic supply only and do not include agriculture, mining, and other uses.
(3) See Appendix K, Groundwater Resource Evaluation. Concern is indicated where the projected increase in average usage exceeds the low estimate of unappropriated replenishment given in Table K-1.
(4) Estimate does not include individual wells and water systems outside of projected supply areas.

TABLE VII-2

POPULATION AND WATER USE PROJECTIONS FOR WATER SUPPLY AREAS - YEAR 2015
(SEE EXHIBIT VII-2)

REGION: SOUTH WHIDBEY

1985 TOTAL POPULATION:	13,550	AVERAGE USAGE, GPCD:	100
POPULATION, YEAR 2015:	29,105	PEAK USAGE, GPCD:	250

FUTURE SUPPLY AREA(1)	SUPPLY AREA DESCRIPTION	1985 POPULATION	2015 POPULATION	AVERAGE USAGE (2) 1985 USAGE GPD	AVERAGE USAGE (2) 2015 USAGE GPD	AVERAGE USAGE (2) INCREASE IN USAGE GPD	PROJECT USAGE EXCEEDS ESTIMATED REPLENISHMENT	PEAK USAGE (2) 1985 PEAK USAGE GPD	PEAK USAGE (2) 2015 PEAK USAGE GPD	PEAK USAGE (2) INCREASE IN PEAK USAGE GPD
SUBAREA:	NORTHWESTERN SOUTH WHIDBEY									
13.	Freeland	2,509	5,389	250,900	539,000	288,100		627,250	1,347,000	719,750
14.	Saratoga Water Systems	1,170	2,513	117,000	251,000	134,000		292,500	628,000	335,500
	SUBAREA TOTALS	3,679	7,902	367,900	790,000	422,100	NO	919,750	1,975,000	1,055,250
SUBAREA:	SOUTHEASTERN SOUTH WHIDBEY									
15.	Langley	1,750	3,759	175,000	376,000	201,000		437,500	940,000	502,500
16.	Clinton	2,710	5,821	271,000	582,000	311,000		677,500	1,455,000	777,500
	SUBAREA TOTALS	4,460	9,580	446,000	958,000	512,000	YES	1,115,000	2,395,000	1,280,000
REGION TOTALS FOR PUBLIC SUPPLY (4)		8,139	17,482	813,900	1,748,000	934,100		2,034,750	4,370,000	2,335,250

(1) Future supply areas are identified by familiar area names and do not necessarily imply an expansion of water system by the same name. Future supply areas are shown in Exhibits VII-1 and VII-2.

(2) Projections are based on public domestic supply only and do not include agriculture, mining, and other uses.

(3) See Appendix K, Groundwater Resource Evaluation. Concern is indicated where the projected increase in average usage exceeds the low estimate of unappropriated replenishment given in Table K-1.

(4) Estimate does not include individual wells and water systems outside of projected supply areas.

TABLE VII-2

POPULATION AND WATER USE PROJECTIONS FOR WATER SUPPLY AREAS - YEAR 2015
(SEE EXHIBIT VII-2)

REGION: CAMANO ISLAND
1985 TOTAL POPULATION: 11,380 AVERAGE USAGE, GPCD: 100
POPULATION, YEAR 2015: 23,050 PEAK USAGE, GPCD: 250

FUTURE SUPPLY AREA(1)	SUPPLY AREA DESCRIPTION	1985 POPULATION	2015 POPULATION	AVERAGE USAGE (2) 1985 USAGE GPD	AVERAGE USAGE (2) 2015 USAGE GPD	AVERAGE USAGE (2) INCREASE IN USAGE GPD	AVERAGE USAGE (2) PROJECT USAGE EXCEEDS ESTIMATED REPLENISHMENT	PEAK USAGE (2) 1985 USAGE GPD	PEAK USAGE (2) 2015 USAGE GPD	PEAK USAGE (2) INCREASE IN USAGE GPD
SUBAREA:	SOUTHERN CAMANO									
17.	South Camano	1,105	2,238	110,500	224,000	113,500	NO	276,250	560,000	283,750
SUBAREA:	NORTHERN CAMANO									
18.	Central Camano	2,975	6,028	297,500	603,000	305,500		743,750	1,507,000	763,250
19.	North Camano	3,940	7,980	394,000	798,000	404,000		985,000	1,995,000	1,010,000
	SUBAREA TOTALS	6,915	14,006	691,500	1,401,000	709,500	NO	1,728,750	3,502,000	1,773,250
REGION TOTALS FOR PUBLIC SUPPLY (4)		7,468	15,125	746,750	1,513,000	766,250		1,866,875	3,782,000	1,915,125

(1) Future supply areas are identified by familiar area names and do not necessarily imply an expansion of water system by the same name. Future supply areas are shown in Exhibits VII-1 and VII-2.
(2) Projections are based on public domestic supply only and do not include agriculture, mining, and other uses.
(3) See Appendix K, Groundwater Resource Evaluation. Concern is indicated where the projected increase in average usage exceeds the low estimate of unappropriated replenishment given in Table K-1.
(4) Estimate does not include individual wells and water systems outside of projected supply areas.

TABLE VII-3

ANACORTES WATER SUPPLY SYSTEM
PROJECTED WATER USE

	ACTUAL 1987			PROJECTED 2000		PROJECTED 2015	
	Avg. Day	Max. Day	Peak Hour	Avg. Day	Max. Day	Avg. Day	Max. Day
Anacortes	1.47	4.27	5.18	1.90	5.50	2.35	6.85
Wholesale Customers							
Oak Harbor/NAS Whidbey (2)	2.14	5.02	6.35	3.00	9.10	5.00	12.50
LaConner	0.27	0.70	0.88	0.45	1.15	0.50	1.30
Swinomish Tribal Community	0.01	0.03	0.04	0.05	0.15	0.07	0.20
Skagit County PUD No. 1 (1)	0.77	2.60	2.60	0.20	0.50	0.25	0.65
Subtotal	3.19	8.35	9.87	3.70	10.90	5.82	14.65
Industrial Customers							
Shell	4.66	5.76	6.19	4.70	5.80	4.70	5.80
Texaco	4.31	4.61	5.04	4.60	5.10	4.60	5.10
Other	0.14	0.21	0.29	1.00	1.00	1.00	1.00
Subtotal	9.11	10.58	11.52	10.30	11.90	10.30	11.90
System Losses	0.34	0.34	0.34	0.60	0.60	0.65	0.65
Theoretical Demand	14.08	23.54	26.91	16.50	28.90	20.12	34.05
Actual Demand/Filter Plant Production	14.08	18.47	21.00	16.50	24.60	20.12	29.00
Potential Future Service to Whidbey Island							
Whidbey Island (3)				0.55	1.40	0.85	2.05
Total Likely Demand, Filter Plant Production				17.05	26.00	20.97	31.05

Footnotes:

(1) Actual Demand = 0.77 in 1987 due to drought connection. W/O Drought = 0.15.
(2) Oak Harbor/NAS Whidbey future water demands derived from the Oak Harbor Comprehensive Water Plan.
(3) Whidbey Island future water demands taken from Island County Coordinated Water System Plan.

TABLE VII-4

WATER SUPPLY ALTERNATIVES AND ASSOCIATED AVAILABLE QUANTITIES

Alternative	Estimated Maximum Additional Quantity (1)
1. Conservation (10% assumed) (see Section V)	1.8 MGD
2. Local Groundwater	
o Whidbey Island	22-38+
o Camano Island	2-10
Redistribution	(2)
3. Anacortes/Oak Harbor System	
o Current pipeline excess capacity above maximum day	4.6
o Additional capacity from existing treatment plant	5.0
4. Stanwood Water System	1.0
5. Everett Water System	(2)
6. The Stillaguamish River	(2)
7. Other Alternatives (see Sections V and VI)	(2)

Footnotes:

(1) Estimates are based on limited available information and are for planning purposes only.

(2) Estimates of additional quantity were not available.

TABLE VII-5

POSSIBLE SHARED WATER FACILITIES

Intertie (1)	Purpose	Approximate Length (Miles)	Minimum Diameter (Inches)	Cost		Comments
				Construction	Project (2)	
A	Supply/Future Extension	1.5	8	$ 180,000	$ 250,000	Provides for alternative supply from Oak Harbor water lines.
B	Supply	4.0	8	$ 480,000	$ 670,000	Provides for alternative supply from Oak Harbor water lines, allows for shared facilities.
C	Supply/Loop	5.0	8	$ 600,000	$ 840,000	Permits interties of small systems and shared facilities, creates a more versatile system.
D	Supply/Future Extension	4	10	$ 580,000	$ 810,000	Allows interties, shared facilities and supply from Oak Harbor.
E	Supply	1	8	$ 120,000	$ 170,000	Provides for an alternative supply from proposed central Whidbey Water System.
F	Supply/Standby Loop/Future Extension	8.5	10	$1,220,000	$1,700,000	Provides alternative supply for small systems, allows shared facilities and potentially loops the Coupeville system.
G	Supply	3	8	$ 360,000	$ 500,000	Interties systems and allows shared source and storage.
H	Supply	3.5	10	$ 500,000	$ 700,000	Interties several small systems, allows for shared facilities and gives supply support from Freeland and/or W and B water system.
I	Supply	3	8	$ 360,000	$ 500,000	Supplies a number of small water systems.

(1) See Exhibit VII-7 for conceptual intertie locations.
(2) Project cost includes 40% indirect costs for engineering, contingencies, sales tax, administrative, and legal.

TABLE VII-5 continued

Intertie (1)	Purpose	Approximate Length (Miles)	Minimum Diameter (Inches)	Cost		Comments
				Construction	Project (2)	
J	Supply/Loop	3 1	8 10	$ 500,000	$ 700,000	Supplies small systems, could improve supply to commercial area, potential for looping the system.
K	Supply	5.5	8	$ 670,000	$ 940,000	Provides alternative supply from a Clinton Water District system.
L	Standby	3.5	6	$ 300,000	$ 420,000	Allows for standby supply from Clinton Water District.
M	Standby	2	8	$ 240,000	$ 340,000	Provides an intertie between Langley and Clinton for standby support.
N	Supply	6	8	$ 720,000	$1,000,000	Interties several systems.
O	Standby	5	6	$ 430,000	$ 600,000	Primarily allows shared facilities between several small systems connecting the Camano Water Association to the north. Provides standby service.
P	Standby	4	6	$ 350,000	$ 490,000	Interties several systems for standby purposes, may allow for shared facilities.
Q	Supply	3	8	$ 360,000	$ 500,000	Extends supply to small water systems; could connect to regional supply from Stanwood system.
R	Supply	8	10	$1,150,000	$1,600,000	Interties several water systems in North Camano Island, provides for shared facilities. Could connect to regional supply from the Stanwood system.

(1) See Exhibit VII-7 for conceptual intertie locations.
(2) Project cost includes 40% indirect costs for engineering, contingencies, sales tax, administrative, and legal.

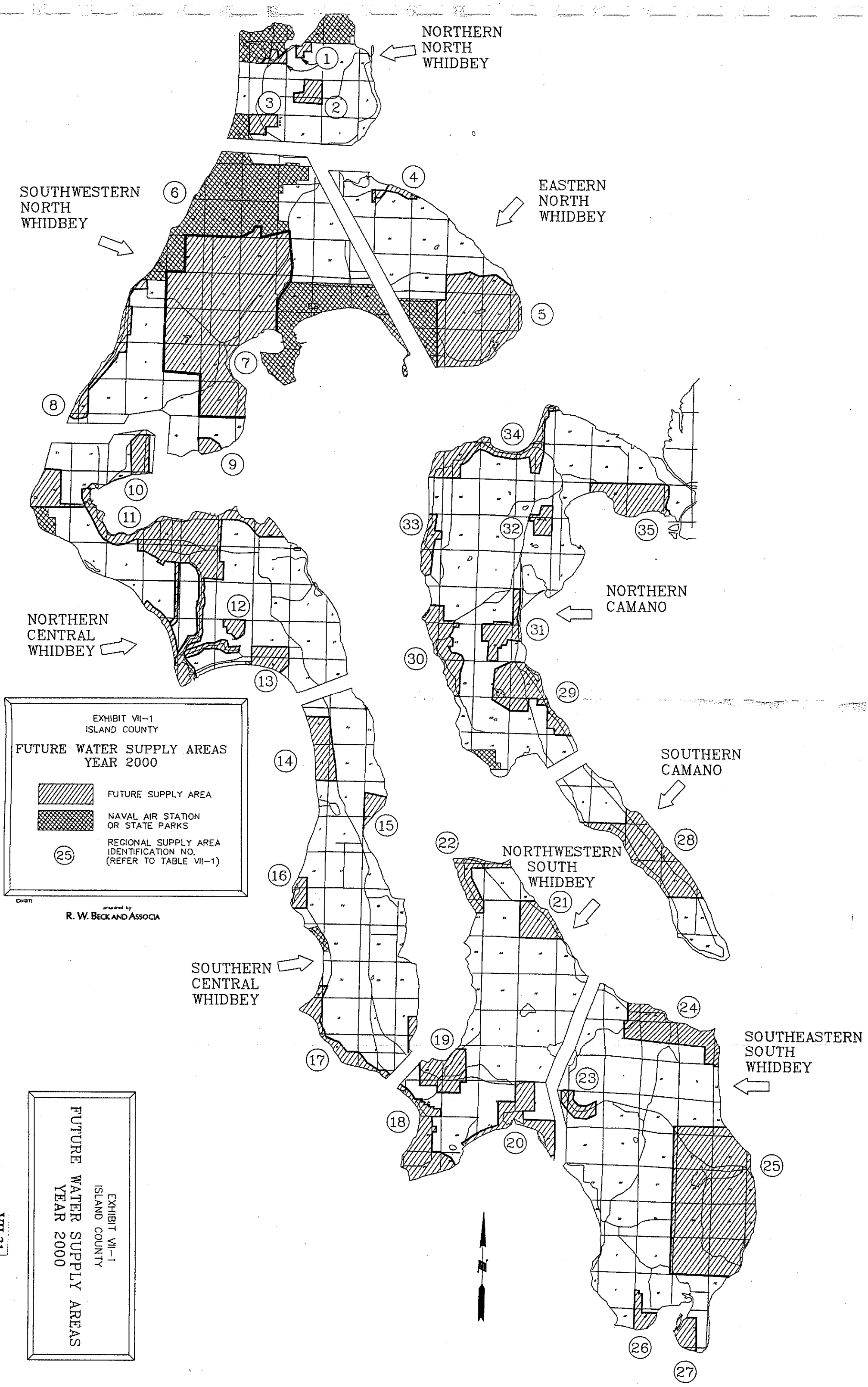


EXHIBIT VII-1
ISLAND COUNTY
FUTURE WATER SUPPLY AREAS
YEAR 2000

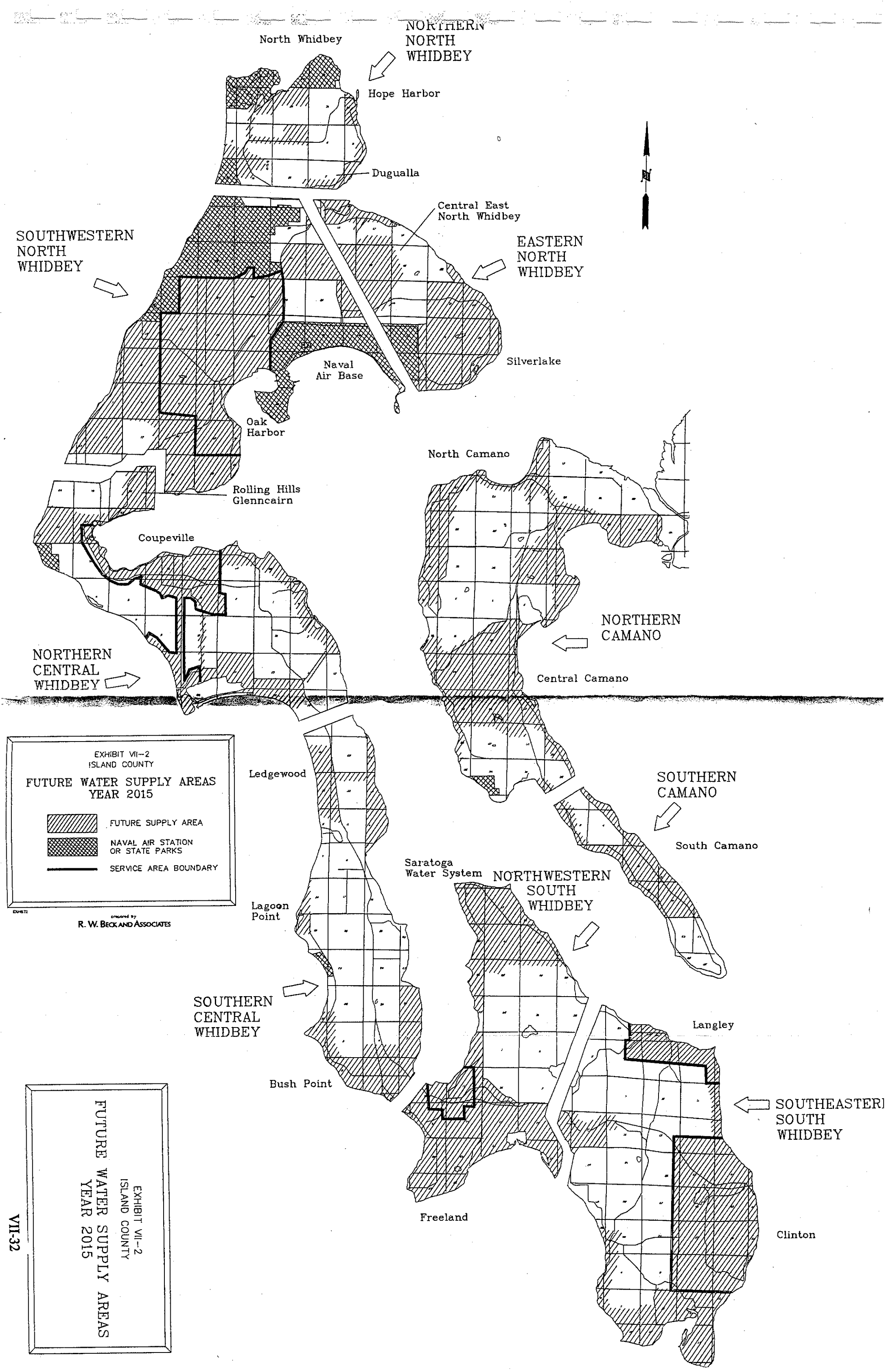
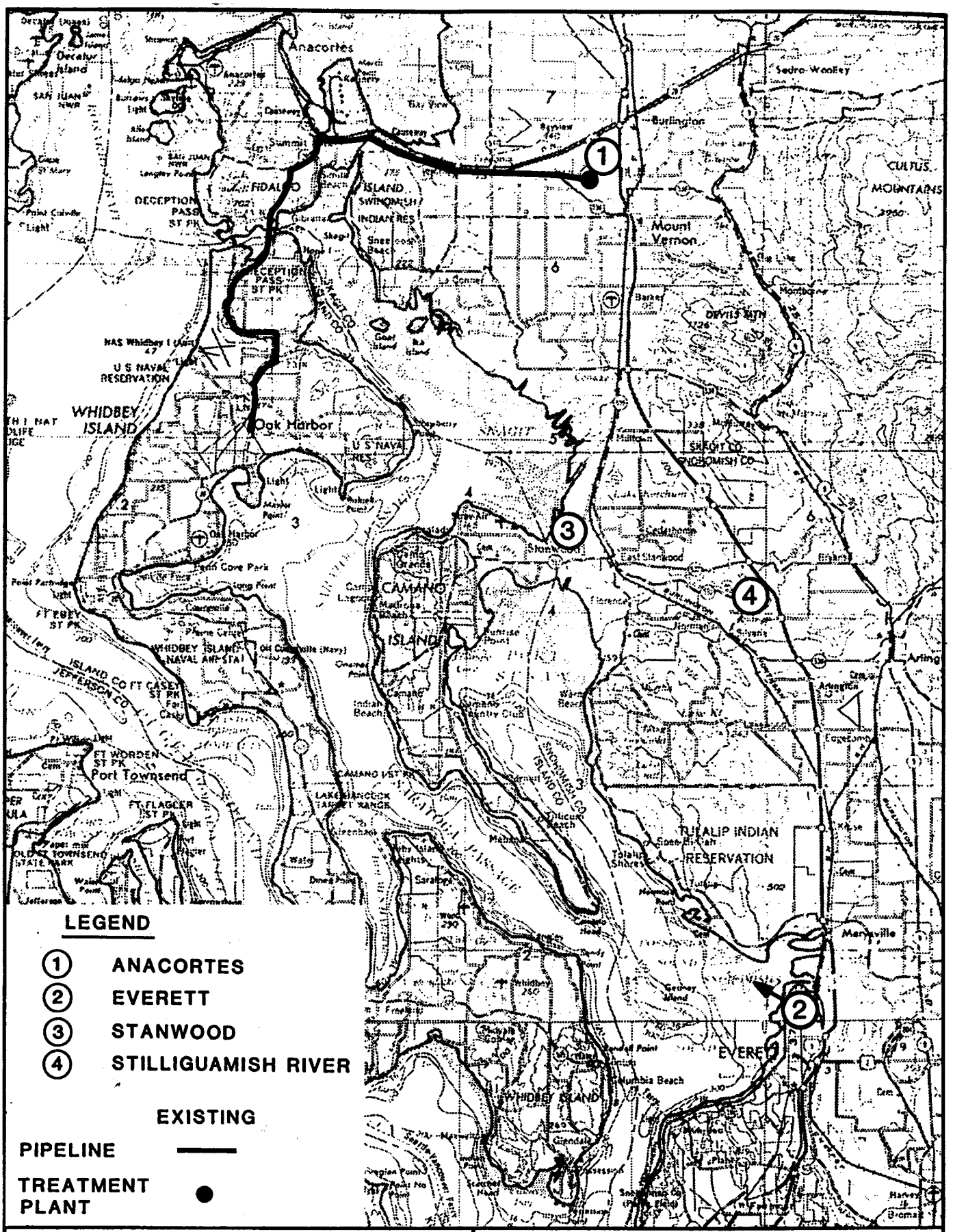


EXHIBIT VII-2
ISLAND COUNTY
FUTURE WATER SUPPLY AREAS
YEAR 2015



ISLAND COUNTY COORDINATED WATER SYSTEM PLAN

prepared by R.W. BECK AND ASSOCIATES

EXHIBIT VII-3

POSSIBLE OFF-ISLAND WATER SOURCES

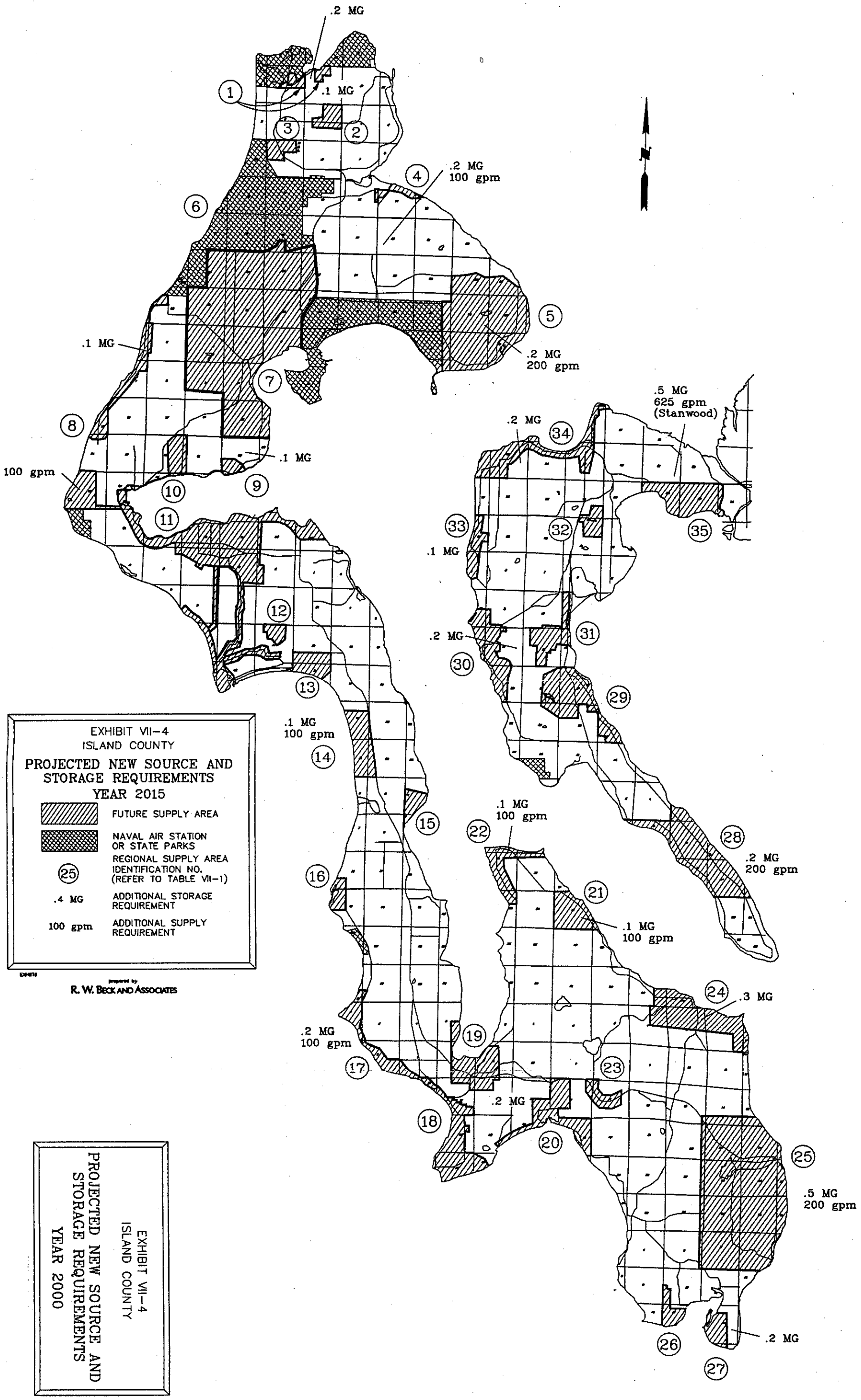


EXHIBIT VII–4
ISLAND COUNTY
PROJECTED NEW SOURCE AND STORAGE REQUIREMENTS
YEAR 2015

- FUTURE SUPPLY AREA
- NAVAL AIR STATION OR STATE PARKS
- (25) REGIONAL SUPPLY AREA IDENTIFICATION NO. (REFER TO TABLE VII–1)
- .4 MG ADDITIONAL STORAGE REQUIREMENT
- 100 gpm ADDITIONAL SUPPLY REQUIREMENT

prepared by
R. W. BECK AND ASSOCIATES

EXHIBIT VII–4
ISLAND COUNTY
PROJECTED NEW SOURCE AND STORAGE REQUIREMENTS
YEAR 2000

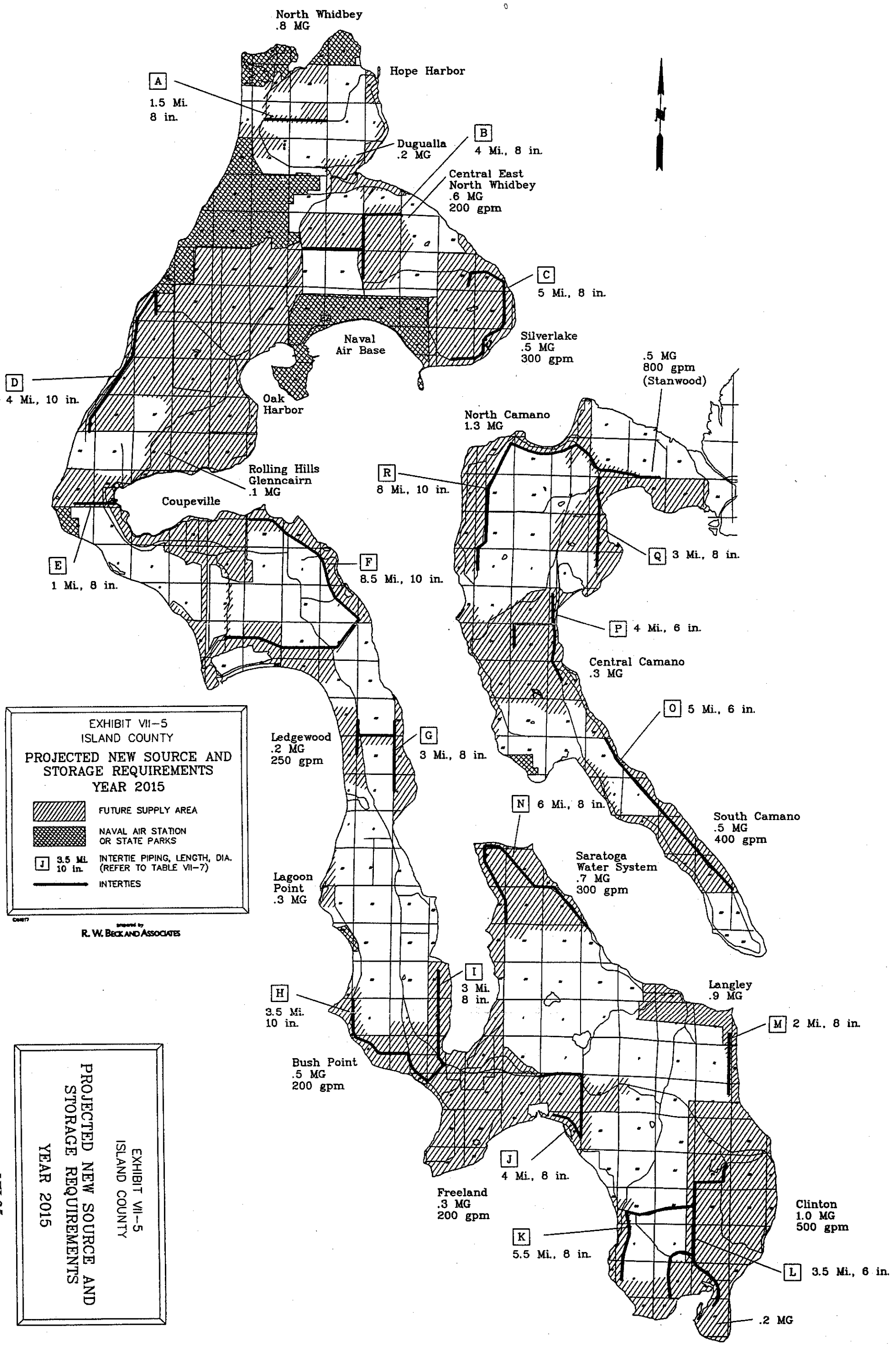


EXHIBIT VII–5
ISLAND COUNTY
PROJECTED NEW SOURCE AND
STORAGE REQUIREMENTS
YEAR 2015

SECTION VIII

PLAN ADOPTION

1. INTRODUCTION

The Coordinated Water System Plan (CWSP) was prepared to fulfill the requirements of the Public Water System Coordination Act, Chapter 70.116 RCW, and Procedures Relating to the Reservation of Water for Future Public Water Supply as empowered by the Water Resources Act of 1971, Chapter 90.54 RCW. The completed Plan will serve as a CWSP, as provided for in the two statutes. This Section briefly outlines the approval process for the CWSP, describes how the CWSP is routinely updated, and provides the environmental review.

2. PLAN APPROVAL PROCEDURES

As outlined in Section II, the completed CWSP is presented in two parts: the Supplemental Provisions detailed in this document, and a compilation of individual Comprehensive Water Plans to be approved by the County and Department of Health (DOH). Completed plans are on file with DOH and the County. Appendix B includes reference to completed and approved plans, and may be revised by resolution of the Board of Commissioners to add newly approved plans and updates.

It is the responsibility of each utility to fulfill its water system planning requirements. The level of effort required is based upon the system size, the expansion plans of the utility, and the type of system ownership. Guidelines for preparing water system plans are available from DOH. All individual Comprehensive Water Plans are to be submitted and approved within 1 year after CWSP adoption. Appendix F provides a record of completed service area agreements, which, like Appendix B, can be updated by resolution of the Commissioners.

Preparation of the supplemental provisions is the responsibility of the County and the local utilities, acting through the Water Utility Coordinating Committee (WUCC). The WUCC identified local needs and gave direction to the development of the CWSP as it related to area-wide issues. Through the efforts of the WUCC and the County agency staff, the procedures, regional policies, and minimum standards have been completed for the Critical Water Supply Service Area (CWSSA).

The completed CWSP is submitted in sequence to the Planning, Health, and Engineering Departments and finally to the Board of Commissioners. Each group reviews the document to ensure there are no inconsistencies with existing

regulations or policies. The Board of Commissioners has 60 days upon receipt of the CWSP to act on the document. Once approved, the CWSP is submitted to DOH, which must also act upon adoption within 60 days.

Any changes requested to procedures, service area boundaries, or other issues prior to the 5-year update of the CWSP need to follow the same process for amendment as that outlined above for CWSP approval.

It should be noted that future applications for water rights reservation, if determined later to be appropriate, cannot be submitted until July 1, 1989. This approved CWSP, in combination with data provided by the Ground Water Management Plan (GWMP) studies, can be submitted to the Department of Ecology (Ecology) as the basis for a reservation request. A determination will need to be made then regarding the proper level of environmental review for reservation, i.e. environmental checklist or environmental impact statement.

3. COORDINATED WATER SYSTEM PLAN UPDATE

In accordance with the provisions of the Public Water System Coordination Act, the CWSP must be reviewed and updated by the WUCC at a minimum of every 5 years, or sooner, if necessary. It is recommended that all individual water system plans included within the next CWSP update be submitted for review and approval at the same time as the CWSP. A uniform approval date will allow the Regional Supplement for the CWSP and the individual water system plans to be updated on the same schedule, ensuring the use of current information among all the utilities.

4. PERIODIC COMMITTEE REVIEW

The WUCC should continue as a standing committee which should meet at least semi-annually to review issues of regional significance and to review implementation issues regarding the CWSP. The Design Standards Subcommittee should meet at least annually to review the effectiveness of and any changes needed to the Minimum Design Standards.

5. ENVIRONMENTAL DOCUMENT

The State Environmental Policy Act of 1971, Chapter 43.21C RCW, requires that all water system plans prepared must be accompanied by an appropriate environmental document. An Environmental Checklist has been prepared for the Island County CWSP and its recommended activities.

The CWSP has been prepared to establish administrative, management, and policy procedures to respond to the needs of existing and future customers in Island County. It is intended to address regional concerns within the County which are not ordinarily included in each utility's water system plan. 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 has been developed in accordance with the Island County Comprehensive Land Use Plan, local community plans, and City land use document to reflect local land use policies and requirements.

It is recommended that before the CWSP has been adopted by the County, a final environmental determination be made. This final determination should be attached or incorporated within the CWSP for submittal to the Board of Commissioners and to DOH for approval.

BEFORE THE BOARD OF COUNTY COMMISSIONERS
OF ISLAND COUNTY, WASHINGTON

IN THE MATTER OF DELEGATING AUTHORITY TO THE ISLAND COUNTY HEALTH DEPARTMENT TO REVIEW AND APPROVE "GROUP B" WATER SYSTEM BOUNDARIES INTO THE COORDINATED WATER SYSTEM PLAN	)))))	RESOLUTION PLG-004-97

WHEREAS, The Island County Coordinated Water System Plan requires that the Planning Department bring new and revised water systems which are to be incorporated into the Coordinated Water System Plan to the Board of County Commissioners for approval; and

WHEREAS, RCW 76.19.070 was amended in 1995 to expand the water system boundary review process to provide that the county legislative authority may delegate approval authority to the County Planning Department or other designated agency; and

WHEREAS, the Board of County Commissioners has determined the review and approval of Group B water system boundaries should be delegated to the Island county Health Department except in the case of an appeal of a Health Department decision regarding review and approval of Group B Water System boundaries or requests for reduction in service area; and

WHEREAS, the Board of County Commissioners has determined Group A water system boundaries shall continue to be reviewed and approved by the county legislative authority; and

WHEREAS, the Board of County Commissioners has determined that appeals of Health Department decision(s) regarding review and approval of Group B Water System boundaries shall be made to and considered by the County Legislative authority; **NOW THEREFORE,**

BE IT HEREBY RESOLVED by the Board of Island County Commissioners that the Island County Health Department shall review and approve Group B water system boundaries except in the case of an appeal of a Health Department decision regarding review and approval of a Group B Water System and/or requests for reduction of existing Service Areas.

APPROVED AND ADOPTED this 3rd day of March, 1997.

BOARD OF COUNTY COMMISSIONERS OF
ISLAND COUNTY, WASHINGTON

MIKE SHELTON, CHAIRMAN

Wm. L. McDOWELL, COMMISSIONER

TOM SHAUGHNESSY, COMMISSIONER

ATTEST:

ART HYLAND, County Auditor
& Ex-Officio Clerk of the Board

ee\c:\Res-Ord\004-97