



Providing the general location, proposed location, and capacity of all existing and proposed utilities, as well as policies and guidance on the developing and siting of utilities in Island County.

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9.1 INTRODUCTION

9.1.1 PURPOSE OF THE UTILITIES ELEMENT

The Utilities Element is a mandatory Element of the Comprehensive Plan and is intended to address utility services in Island County. The Utilities Element shall contain “the general location, proposed location, and capacity of all existing and proposed utilities,” as per RCW 36.70A.070(4).

This Element should provide general policies and guidance on the developing and siting of utilities. The utility agencies do this themselves, based on demand for their services. It is important to note that detailed forecasts and plans may not have been prepared by some utilities. Availability of these utilities does not determine where or when growth will occur; rather, the utilities discussed in this plan generally follow the existing patterns of development.

In Island County, utility facility placement or siting problems generally have not generated County-wide concern or controversy. Some concerns have been raised about the siting of communication towers. Major facilities, such as hydroelectric or nuclear generation sites, will likely never be proposed in Island County. The problems facing utility providers may include issues such as the ability to meet anticipated local demand with modest transmission or distribution facilities and local siting of facilities such as electrical substations or communication towers.

9.1.2 SCOPE OF THE UTILITIES ELEMENT

A utility is generally a for-profit or a not-for-profit organization that develops and maintains the infrastructure for a public service (e.g. electricity, communication, etc.). Utilities are generally paid

UTILITIES ELEMENT GOALS

- 1 Facilitate the provision of utilities at levels of service and rates appropriate to accommodate planned development within Island County and its incorporated areas.
- 2 Ensure that utility service is provided in a manner that is environmentally sensitive, safe, reliable, economical, and aesthetically compatible with surrounding land uses.
- 3 Process permits and approvals for utility facilities in a fair and timely manner, and in accordance with predictable development regulations.
- 4 Improve accessibility to government through interactive audio/visual communication, considering the geography of Island County.
- 5 Manage and protect ground water withdrawals and provide for resource protection through a common goal of non-degradation for existing and future residents of Island County.
- 6 Manage water systems in a way that protects the quantity and quality of groundwater resources for existing and future residents of Island County.
- 7 Ensure that Island County plans for water systems in a manner that utilizes the best available information regarding water resources, so that the resource will be preserved for current and future use.

for through fees or rates from customers, and are supplied as requested. This differs from capital facilities, which are generally developed and maintained by a public agency (e.g. Island County, Coupeville School District, etc.) and generally paid for through taxes or levees. Examples of capital facilities include: roads, parks, etc. Some systems which may be considered a utility (such as sanitary sewers, surface water management facilities, and solid waste facilities) are included in the Capital Facilities Element of this Comprehensive Plan.

During the 2016 Comprehensive Plan update, the Water Resource Element was split into the new Natural Resources Element and the Water Resources section of this Utilities Element. Since water systems act similar to utilities, it was most appropriate to include them. This moved the goals, policies and background information in the Water Resources Element relating to the siting, permitting and management of water systems into this Element. Water systems are also managed under the County's Coordinated Water System Plan. Some special Purpose Districts, such as water and sewer districts, may have their own planning documents relevant to this Element.

The utilities addressed in this Element include: natural gas, electrical, telecommunications facilities, and water systems.

9.2 REGULATORY ENVIRONMENT

9.2.1 STATE AND FEDERAL REGULATION OF UTILITIES

Utility activities and development are also subject to regulation by various State and Federal agencies. While Island County acknowledges the roles and authorities of these agencies, it retains its right to manage the siting of utilities within Island County.

Following is a listing of the major utility-regulating authorities, their roles and relevant laws. Utility providers are also subject to other State and Federal regulations regarding rates, construction and service standards, and competition.

9.2.1.1 Washington Utilities and Transportation Commission

The Washington Utilities and Transportation Commission (WUTC), composed of three members appointed by the governor, is empowered to regulate utilities (including, but not limited to, electrical, gas, telephone, telecommunications, and water companies). State law (WAC 480) regulates the rates and charges, services, facilities and practices of utilities. Any change in customer charges or service provision policy requires WUTC approval. Pursuant to the recent findings/conclusions of Washington State Supreme Court in Electric Lightwave, Inc., and Digital Direct V. WUTC, the WUTC does not have the authority to grant exclusive or quasi-exclusive areas of service to telephone companies.

9.2.1.2 Federal Energy Regulatory Commission

The Federal Energy Regulatory Commission (FERC) is an independent five-member commission with the US Department of Energy. FERC establishes rates and charges for the interstate transportation and sale of natural gas, for the transmission and sale of electricity, and the licensing of hydro-electric power projects.

9.2.1.3 Natural Gas Policy Act of 1978

The central theme of the National Gas Policy Act (NGPA) is encouragement of competition among fuels and suppliers across the country. As a result, natural gas essentially has been decontrolled. The NGPA also contained incentives for developing new natural gas resources, and tiered pricing structure aimed at encouraging the development of nationwide transmission pipelines. The result of the Act has been that many consumers are now paying less for natural gas than they were in 1980.

9.2.1.4 Northwest Power Planning Council

The Northwest Power Planning Council (NWPPC) focuses on the generation of electricity; however, its policies have implications for gas too.

9.2.1.5 State Environmental Policy Act (SEPA)

Per WAC 197-11-800(24), many utility activities are exempt from environmental review under SEPA. This includes, except on lands covered by water, the installation of communications lines (telephone, cable television); installation or construction of electric facilities with an associated voltage of 55 kV or less, including underground installation of existing lines or upgrade of existing 55 kV lines to greater voltages; the installation of natural gas distribution lines (as opposed to transmission lines); and maintenance, repair, replacement, operation, or other activity related to the above, provided such activity does not raise the level of the action above the exemption threshold.

9.2.1.6 Federal Communications Commission (FCC)

The FCC regulates and licenses agencies and utilities, such as television, radio, telecommunications and cable TV providers.

9.2.1.7 Local Regulation of Utilities

Local authorities may choose to regulate utilities subject to review under the State Environmental Policy Act (SEPA), based upon established thresholds, zoning, shoreline management, and utility accommodation or land development ordinances.

Island County regulates placement of utility facilities within County right of ways in ICC 11.01.080. All utilities discussed in this plan are subject to these requirements when placing facilities within County right

of ways. Placement of utilities on public or private property is regulated under Island County's Site Plan Review, Short Platting, Subdivision, and Planned Residential Development regulations.

9.3 INVENTORY AND ANALYSIS

The exact location of many utilities are unknown, but the GMA requires the County to include the general location of those utilities. This Element identifies existing utility systems within the County and describes improvements that are necessary to meet anticipated demand. Descriptions of these systems are supplemented with maps which illustrate the utility systems and any anticipated or proposed improvements necessary to provide adequate service to the community. Also discussed are issues relating to siting and health that are particular to each type of utility.

Most of the information contained in this inventory is excerpted from plans developed by the utilities themselves, as well as coordinating with the utility providers. Detailed written plans are not always available from all utilities, some utility providers are reluctant to share information regarding existing and proposed facilities, due to security concerns. This inventory does not include all of the data or information available, but attempts to present the relevant information in an organized and useful format.

9.3.1 NATURAL GAS

9.3.1.1 CASCADE NATURAL GAS CORPORATION

Cascade Natural Gas Corporation (CNG), a privately owned for-profit corporation, is the sole provider of natural gas in Island County. CNG is a subsidiary of the Montana-Dakota Utilities Co.

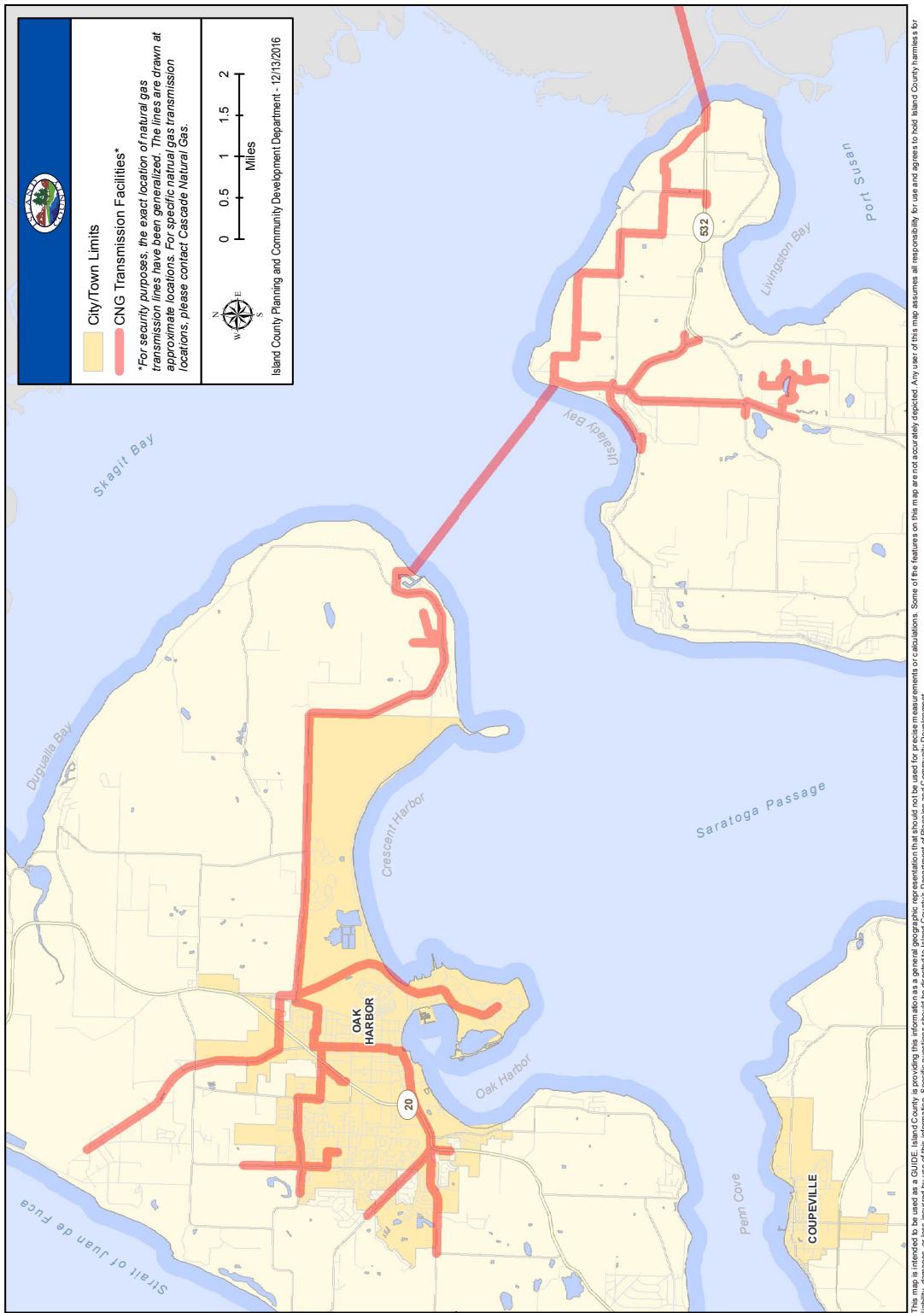
Washington State requires gas providers to demonstrate that existing rate payers will not subsidize new customers. Thus, gas transmission line extensions are not planned in advance but are initiated only when there is sufficient customer demand.

Cascade serves more than 272,000 customers in 96 communities, 68 of which are in Washington and 28 in Oregon.

EXISTING SYSTEM

Natural gas is supplied to the County through a 6 inch high-pressure line which follows SR 532 onto Camano Island. A limited service area exists on northeastern Camano Island. A submarine 6 inch high-pressure main originates at Brown's Point on Camano Island and connects Whidbey Island at Strawberry Point. Service on Whidbey Island is limited to the City of Oak Harbor, NAS Whidbey Island, and surrounding unincorporated areas within reasonable distance of the transmission main.

MAP 9A. Cascade Natural Gas (CNG) Service Areas and Transmission Facilities



FUTURE DEMAND AND PROPOSED FACILITIES

The location, capacity and timing of any improvements to the existing Cascade Natural Gas Corporation distribution system are driven purely by demand. This means that future connections are not planned in advance; rather, connections are initiated by customer requests. This includes installation service for new development and conversion from electricity or oil to natural gas. Also, unlike some utility providers, natural gas service may legally be refused to potential customers if the extension is not cost effective to the company.

No major new facilities, upgrades, or extension of services beyond existing service areas are planned or anticipated within the next 20 years, but the utility is willing to serve major new development outside existing service areas if the development occurs relatively close to existing mains.

9.3.2 ELECTRICAL UTILITIES

Electricity is vital to any community, but the vast network of generating facilities, transmission lines, switching stations, and distribution lines are rarely given a thought until the power goes out because of a problem. Electrical service providers must coordinate and plan their activities to a much greater degree than less critical utilities. Under State law, electrical utilities must provide electricity upon demand.

Roughly 70% of the electricity in the Pacific Northwest comes from hydroelectric generation. Diminishing natural resources, lack of available sites for new generating stations, and growing needs pose significant regional challenges for electric utilities. Local issues involve the siting of transmission systems, substations and distribution lines.

Possible health effects from proximity to electrical transmission facilities have concerned some members of the public. Although research is ongoing, electromagnetic fields of the type and levels found near electrical power facilities have not been conclusively demonstrated to cause adverse effects in humans. In response to these concerns, new facilities are sometimes designed or located to reduce exposure to electromagnetic fields. The Environmental Protection Agency has not adopted any standards relating to electromagnetic fields.

9.3.2.1 SNOHOMISH COUNTY PUBLIC UTILITY DISTRICT (PUD)

Since 1949, Camano Island has been provided electrical utilities by the Snohomish PUD, the second largest publicly-owned utility in the Pacific Northwest in terms of number of customers. The three elected commissioners of the district set policies and adopt rates and charges for services. The main offices of the PUD are located in Everett, with five regional offices, including one in Stanwood.

EXISTING SYSTEM

The PUD's electric system covers approximately 2,200 square miles in Snohomish County and on Camano Island with a total 6,195 power line miles. There are approximately 303.44 circuit miles of power lines on Camano Island, with 203.55 overhead miles and 99.89 underground miles.

Due to security concerns, Snohomish PUD has chosen not to share the location of existing utilities and proposed projects.

9.3.2.2 PUGET SOUND ENERGY

Puget Sound Energy (PSE) is a private utility providing electric and natural gas service to homes and businesses in the Puget Sound region and portions of Eastern Washington, covering 10 counties and approximately 6,000 square miles. PSE's regional and local electric and natural gas planning efforts are integrated and centered on providing safe, dependable, and efficient energy service. PSE provides electrical power to more than 1.2 million electric customers throughout 10 counties.

PSE currently has about 3,000 megawatts of power-generating capacity, and purchases the rest of its power supply from a variety of other utilities, independent power producers and energy marketers across the western United States and Canada.

EXISTING FACILITIES

Whidbey Island is served exclusively by Puget Sound Energy. Electricity provided by PSE to Island County is often produced with the Baker River Dams and is interconnected to the Northwest's regional transmission grid through an extensive network of transmission facilities providing bulk transmission service to meet the demands of electricity customers within the region. The PSE electric transmission facilities within Island County are important components of the electric energy delivery grid serving the Puget Sound region. As electricity reaches the homes and businesses in Island County the voltage is reduced and redistributed through lower-voltage transmission lines, distribution substations, overhead and underground distribution lines, smaller transformers, and to individual meters.

PSE serves approximately 37,000 commercial and residential locations within Island County and operates and maintains approximately 600 miles of overhead facilities and 500 miles of underground cables.

FUTURE DEMAND AND PROPOSED FACILITIES

PSE has plans to systematically deploy smart grid technology at each level of infrastructure to enhance and automate monitoring, analysis, control and communications capabilities along its entire grid. Smart grid technologies can impact the electricity delivery chain from a power generating facility all the way to the end-use application of electrical energy inside a residence or place of business. The ultimate goals of smart grid are to enable PSE to offer more reliable and efficient energy service, and to provide customers with more control over their energy usage.

To meet local electric demand, new transmission lines and substations may need to be constructed. In addition, existing facilities will need to be maintained and possibly rebuilt to serve current and future demand. The system responds differently year to year and PSE is constantly adding or modifying infrastructure to meet electrical demands. With that said, potential major construction and rebuilding/

MAP 9B. Puget Sound Energy (PSE) Service Areas and Transmission Facilities



maintenance activities that are anticipated in Island County in the next 10 to 20 years include the following:

- Adding a potential third 115 kV transmission line to the Island. This will improve reliability on the Island on a day to day basis as well as during storm events. It will also add transmission capacity to serve future growth.
- Adding a planned new transmission/distribution substation near Maxwelton Road, increasing reliability in and around the Langley and South Whidbey area. This will involve some minor location changes to the transmission lines near the planned substation to connect the substation to the existing power system.
- Adding a potential new transmission substation in the Central Whidbey area, increasing transmission line reliability throughout the Island.
- Rebuilding the existing Whidbey Substation (Oak Harbor) by adding a 115 kV auxiliary bus and bus tie circuit breaker which will increase system reliability and replace several degrading oil circuit breakers with new gas insulated circuit breakers.
- Rebuilding the existing 115 kV transmission line crossings of the Deception Pass and Cornet Bay.

In addition to plans for two new substations and a possible new transmission line, PSE plans to continue its current increased vegetation management and key rights-of-way (ROW) expansion on the Island along the existing 115 kV transmission lines. This ongoing vegetation management and key ROW maintenance and acquisition program has increased reliability on the Island dramatically over the last 8 years and will continue to do so into the future.

9.3.3 TELECOMMUNICATIONS UTILITIES

9.3.3.1 TELEPHONE

Standard wired telephone services are becoming less common, as users are moving more to cell phones or Voice Over Internet Protocol (VoIP). Two standard telephone utilities service Island County. Frontier serves all of Camano Island and northern and central portions of Whidbey Island. Whidbey Telecom existing service area begins at Greenbank and covers the southern part of Whidbey Island.

Like investor owned gas and electric companies, telephone companies are regulated by the WUTC, which ensures reliable service is provided at reasonable rates. It would be to the economic advantage of Island County to have rates restructured to eliminate intra county toll charges.

Standard telephone facilities include a central plant, which houses switching gear (often in the same building as central offices), remote switching stations, microwave and the familiar utility poles and overhead lines. Underground installation of telephone lines and use of efficient fiber optic systems is becoming more common as technology advances and the regulatory framework responds to aesthetic concerns.

While standard telephone service is becoming less demanded, Digital Subscriber Line (DSL), for internet access is still an important service offered through telephone companies.

9.3.3.1.1 *FRONTIER*

Frontier's service area in Island County includes the incorporated areas of the City of Oak Harbor and the Town of Coupeville. Most of Frontier's major facilities are located on the mainland. Frontier has office facilities located in Oak Harbor.

9.3.3.1.2 *WHIDBEY TELECOM*

Whidbey Telecom is an independently owned and operated telephone utility serving roughly the southern half of Whidbey Island, with main offices in Freeland. In addition to its standard telephone service, the company also provides cable television, marine communications, and access to the Internet. Whidbey Telecom has added an extensive network of optic fiber systems to its existing wire line system.

FUTURE DEMAND AND PROPOSED FACILITIES

Existing telephone facilities and some minor upgrades, mainly at the distribution level, will adequately serve the County's needs during the planning period, and no new major facilities are planned by either Frontier or Whidbey Telecom.

9.3.3.2 **CELLULAR TELEPHONE SERVICE**

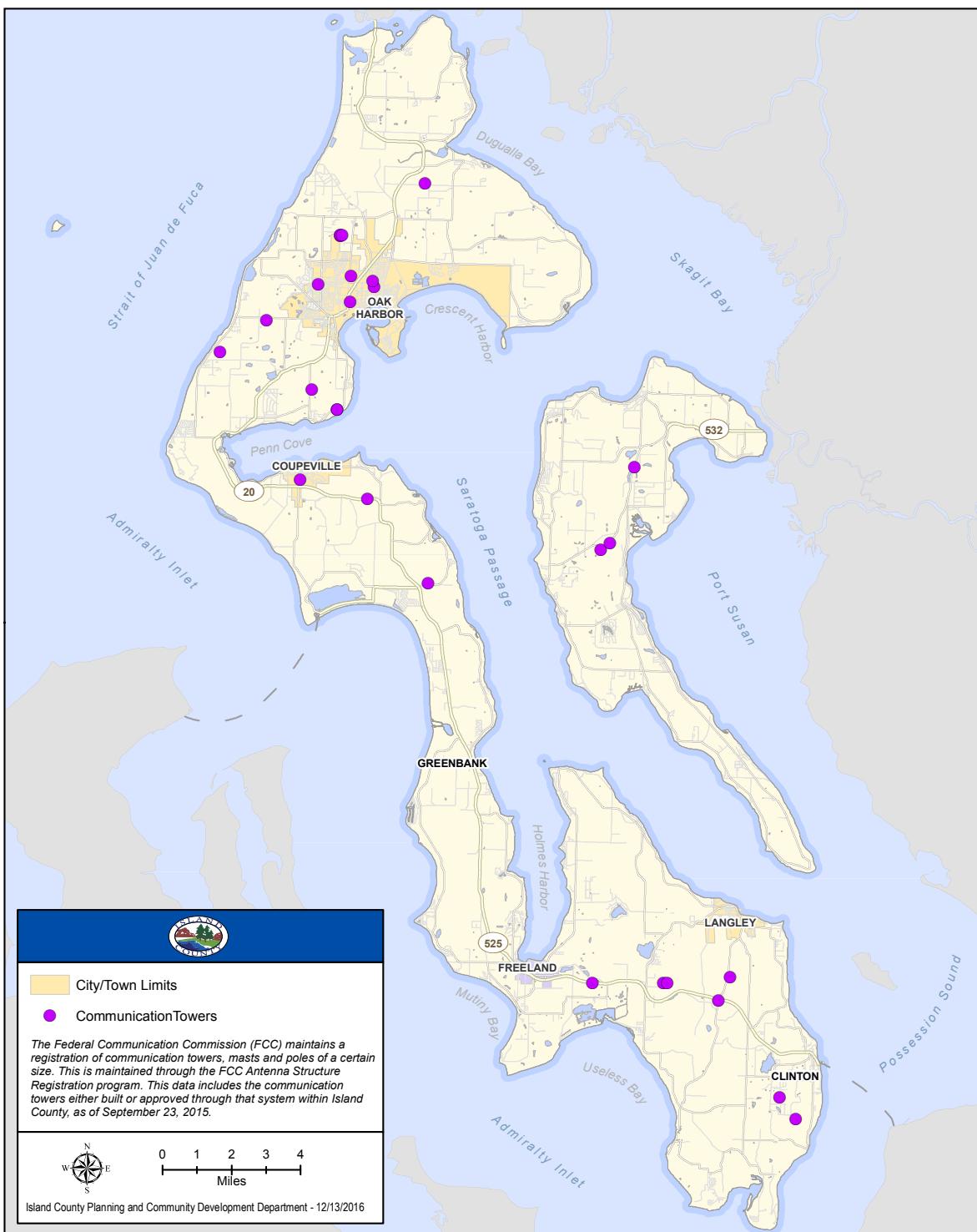
Cellular telephone service continues to become increasingly popular. A cellular network consists of cells (a geographic area served by a transmitting and receiving tower), cell sites (the tower site, also including a base station radio and interconnecting equipment), a switching station (which receives and distributes signals from the cell sites via conventional land lines and microwave signals). In order to cover broad service areas, cell sites must be located close enough to one another so that service is uninterrupted as the user moves from one location to another.

Cellular towers can pose siting problems. The towers can be free-standing structures, but are often placed on top of existing structures where convenient; this is more common in urban areas, and creates less of a visual impact than free-standing towers. As service expands or changes, existing cell sites may need to be reconfigured.

Due to the rural nature of Island County, many areas are without adequate cellular service. This is not only a nuisance for customers but is increasingly becoming a public safety concern as few residents have landlines and rely on cell phones for emergency calls.

At the Federal level, cellular phone facilities are regulated by the Federal Communications Commission (FCC), which has jurisdiction over the public airwaves, assigning frequencies and licensing operators. The FCC requires that transmitting towers be located such that transmission of signals is unobstructed. Local jurisdictions can regulate tower siting to the extent that a Federally-licensed use is not impeded.

MAP 9C. Communication Towers



Thus, a local jurisdiction can deny approval of a tower at a particular site, but cannot impose an outright ban on towers within its jurisdiction.

The Federal Aviation Administration (FAA) and WSDOT Aviation Division also review proposed towers when they exceed 200 feet in height (above ground level) or when the proposed location is within 20,000 feet of a major airport (serving military and commercial aircraft) or within 10,000 feet of a smaller airport. While not having the authority to deny potential sites, the FAA coordinates its review process with the FCC, who may deny a particular site if the FAA objects.

Identifying specific cellular companies who service Island County is difficult, since most of the cellular networks are lease or sub-leased to various companies. Instead of describing these companies individually, this Element includes a map of the existing cellular antennas which have been installed or proposed through the FCC.

9.3.3.3 CABLE TELEVISION

Cable carries data through coaxial cable from trunk lines, which originate at a head end site, which processes information and distributes it through the distribution system. Though the term "cable" implies wiring throughout the system, many cable systems also utilize satellite dishes and microwave antennae. Cable distribution lines are often run using leased overhead utility poles, but underground installation of cable systems is becoming more common.

Frontier and Comcast are the main cable providers in Island County. Cable companies and cable service change often, and require relatively minor facilities. No new major facilities are expected to meet anticipated growth in Island County. Therefore, detailed information regarding cable providers is unnecessary.

9.3.3.4 INTERNET

Internet is quickly becoming an essential service for our modern society, many of which rely heavily on it for work. Increasingly, people use internet for phone services (VoIP) and television services. Most businesses rely on reliable internet for their everyday business. Generally, internet service is not provided by a separate utility, but rather through a cable, telephone or cellular provider. As such, no detailed company information is provided in this Element.

9.4 WATER RESOURCES

Island County has pro-actively achieved a technical understanding of its water resources through numerous studies. Based on this knowledge, a number of water supply and groundwater resource protection and management plans and policies have been adopted and implemented. These elements manage adequacy and protection of the resource through a common goal of non-degradation. A summary of these efforts include:

1979–1983 USGS Water Resource Study.

1982 EPA Sole Source Aquifer Designation.

1985 Designation of Island County as a Critical Water Supply Service Area per 70.116 RCW.

1989 Adoption of Island County/State Department of Health Salt Water Intrusion Policy.

1990 Adoption of Island County Coordinated Water Plan (CWSP) per 70.116 RCW.

1990 Adoption of ICC 13.03A, Water System and Fire Flow Standards.

1990 Memorandum of Understanding between Island County and Department of Ecology on Water Resource Planning, Management, and Permitting Activities.

1990 September 18, 1990, ICC Chapter 8.09, Potable Water Source and Supply per GMA requirements 19.27 and 58.17 RCW.

1991 Adoption of Groundwater Management Program (GWMP) per 90.44 RCW.

1992 ICC 8.09 revised to include Critical Recharge Area Requirements pursuant to GMA.

1996 Hydrogeologist and data entry staff support hired for monitoring, database development and maintenance, resource management, groundwater evaluations, and development of groundwater flow and sea water intrusion models.

1997 Island County and the United States Geological Survey (USGS) cooperative four year Ground Water Recharge Study (1997–2001).

2001 Present Watershed Planning – development of a comprehensive county-wide water resource plan.

Island County has shown foresight in pro-actively managing its groundwater resources. In many cases, such as the Sea Water Intrusion Policy and aquifer testing requirements, Island County has led the State in developing resource evaluation and management policies and has successfully worked to incorporate these policies into agency review of projects involving Island County Resources.

The GMA water adequacy requirement for building permits and subdivisions was adopted in Island County a mere 11 weeks after GMA became effective. Current programs are being implemented without grant funding thereby showing the commitment of integration of resource management and protection in land use development review and decision making.

The existing water quality and water level monitoring program, comprehensive groundwater database, and construction of groundwater flow and sea water intrusion models provides the best available data for determining adequacy and detecting trends in groundwater quality and availability. All of these integrated programs provide the technical basis for determining future groundwater capacity and future land use development prior to project approval.

9.4.1 WATER SUPPLY AND WATER RESOURCE MANAGEMENT

REQUIREMENTS AND ACTIVITIES

9.4.1.1 Water Supply Overview

In 1979, Island County contracted with the USGS to conduct a water resource study. This four year study set out to: define the hydrogeology of the Islands; determine the chemical quality of groundwater; and identify areas of existing and potential sea water intrusion. This study has provided detailed information on the hydrogeology of Island County and has been utilized in numerous subsequent studies.

In 1982, the Environmental Protection Agency (“EPA”) declared Island County a Sole Source Aquifer. The designation acknowledged the County’s reliance on groundwater as a potable water source and requires federally funded projects be designed to ensure protection of groundwater resources. The County is in fact served by a multiple aquifer system. The sole source designation refers to the County’s reliance on groundwater for drinking water rather than a singular aquifer.

Island County’s “sole source” aquifer system is the critically important water supply for people living outside the general Oak Harbor area. Approximately 72% of the county’s population relies upon groundwater as a potable water resource. Population growth in rural areas has increased groundwater demand proportionally; this is expected to continue in the future. Studies completed to date, including hydrogeologic investigations conducted by local, state and federal agencies, conclude that groundwater supplies are a finite resource in Island County.

Many of the developed coastal and peninsular regions of Island County are experiencing degrees of seawater intrusion. The Island County Health Department compiles water quality data to monitor seawater intrusion and regularly updates a map that delineates these intrusion regions.

The City of Oak Harbor operates the largest municipal water supply system in Island County. The primary source of supply for Oak Harbor is from Anacortes through two parallel pipelines. The pipelines are owned by Oak Harbor and supply the U.S. Naval Air Station as well as Oak Harbor. All other residents in the County are dependent upon groundwater for their source of water supply.

9.4.1.2 Coordinated Water System Plan

In 1985, the Board of Island County Commissioners declared Island County a Critical Water Supply Service Area, pursuant to RCW 70.116. This declaration was based on an assessment that identified water supply problems related to uncoordinated planning, inadequate water quantity, or unreliable service existing throughout the County. A Coordinated Water System Plan (CWSP) was completed in 1990, addressing water quantity/quality problems. This plan includes several management options to be implemented by the County’s public water systems. The major elements of the plan include a Utility Service Review Procedure and Conservation and Minimum Design Standards. Highlights of these requirements are outlined below:

9.4.1.2.1 Utility Service Review Procedure

Prior to new water system development, an applicant must attempt to obtain water service from neighboring purveyors.

New and expanding systems must prepare a water plan that evaluates the existing system, needed improvements and future needs.

9.4.1.2.2 Conservation

Water conservation requirements for new water systems include:

- Installation of meters at individual connections and the well source.
- Implementation of rate structures that encourage water conservation.
- Development of a leak detection and repair programs.
- Development of water use restriction procedures for drought periods.

9.4.1.3 Design Standards

On July 9, 1990, the Board of Island County Commissioners adopted Chapter 13.03A ICC, Water System and Fireflow Standards. Chapter 13.03A ICC establishes criteria for the design and construction of public water systems within Island County. The ordinance is supplemental to other federal, state, and local criteria governing the construction and operation of public water systems and also complies with design standards set forth in the CWSP. This code includes requirements for resource protection, monitoring and management such as:

- Metering at the well head.
- Metering individual connections.
- Water level device installed in the well for water level measurements.

To date, the CWSP has not prevented the proliferation of small, independent water systems. The inter-connection of water systems and development of larger water systems with superior technical expertise and facilities has met with marginal success. Due to Island County's rural nature and historical development patterns, many small, scattered developments do not fit the CWSP's goals to encourage the formation or expansion of fewer but larger, well-managed systems (rather than establish small, poorly staffed or unmanaged systems). Implementing the anti-sprawl strategies of the Comprehensive Plan will greatly assist in coordinating management of water systems.

Development demands pose many challenges to available water supplies. Sufficient quantities of potable water are needed to support existing users and any increased population. There is a continuing need for improvements to domestic water systems and increased water conservation efforts. Many small water systems and community associations now provide most of the domestic water to Island County residents, while individual wells serve approximately 7% of the County's population. Often small water systems and community associations are not adequate to serve an expanding population. Many older systems were undersized to begin with, and some are inadequate for their existing service area. Extensive alterations

will be required, including improvements to distribution systems, water supplies and storage capacities, and fire protection facilities. Federal requirements for water quality monitoring will place additional burdens on many small systems. Consolidation of water districts and associations is desirable to provide adequate improvements for delivering public water supplies at the least possible cost to consumers.

Avoiding additional seawater intrusion and other potential groundwater quantity and quality problems depends on careful management of existing finite groundwater resources. The County should encourage the development of alternative management strategies to make the adequate improvements for delivering safe and reliable public water supplies at the least possible cost to consumers.

Hydrogeologic investigation and data collection must continue to better predict groundwater availability, as should investigation of potential mainland water sources, when warranted. As indicated elsewhere, clustering and limiting impervious surfaces will maintain infiltration, which is the sole source of the County's groundwater.

9.4.1.3.1 *Groundwater Management Program*

In 1992, the Ground Water Management Program (GWMP) was completed, pursuant to RCW 90.44, and adopted as an element of the Island County Comprehensive Plan. This plan provides water resource management options to protect groundwater in Island County. Changes in health regulations (Chapter 8.09 ICC) to implement portions of the GWMP and implementation of non-regulatory programs followed adoption of the GWMP. The reports listed in Sections 9.4.1.3.2 through 9.4.1.3.5 are major elements implemented by the Island County Health Department.

9.4.1.3.2 *Conservation Program Option Paper #3*

A number of conservation measures have been adopted and are implemented in design review and water supply approvals. Pursuant to ICC 13.03, and ICC 8.09, all new drinking water wells drilled in the county are required to be metered whether they are public water supplies or single-family individual wells. For individual wells serving one single-family residence, verification of metering is required prior to approval of a Water Availability Verification Form and issuance of a building permit. For public systems, both source and individual connection meters are required on new and expanding systems. Use-based rate structures promoting conservation and other conservation practices are implemented through the approval of the required water system operation and maintenance agreements. The Island County Salt Water Intrusion Policy also requires the adoption of additional conservation requirements in medium and high-risk areas of seawater intrusion.

9.4.1.4 Ground Water Monitoring and Evaluation

9.4.1.4.1 Data Collection and Management Program Option Paper #5

WELL INVENTORY.

Well logs either on record with the Island County Health Department or available through the Department of Ecology have been entered into the hydrogeologic database. All new public and individual wells are approved by the Health Department for siting criteria.

WATER LEVEL MONITORING.

- A. Water systems in high and medium risk areas require water level monitoring in April and August of each year and the results are sent to the Island County Health Department and/or Department of Ecology. The Island County Health Department has incorporated this data into their hydrogeologic database.
- B. Water levels are monitored biannually during water sample collection of the 60 + wells in the monitoring network managed by the County Hydrogeologist.
- C. Water level electronic measuring tapes are available to the public and can be checked out for use from the Island County Health Department Coupeville office.

WATER QUALITY MONITORING.

- A. The eight well monitoring network started in 1986 by the Island County Health Department was expanded in 1992 to 20 wells and in 1993 to 40 wells. The wells are monitored in April and August of each year. The current well monitoring program managed by the County Hydrogeologist includes the 40 wells and variable area specific monitoring of up to 60 wells. The Island County Health Department is incorporating this data into their hydrogeologic database.
- B. Routine water quality sampling is required by public water systems. In addition, conditions of approval in medium and high-risk areas for public wells include additional sampling for chloride and conductivity in April and August and reporting to the Island County Health Department.
- C. Water quality results are currently entered into the hydrogeologic database that is equipped with numerous geochemical analysis tools.
- D. Single family individual wells are required to monitor for water quality prior to the approval of building permits (per ICC 8.09).
- E. Numerous wells are monitored on a quarterly basis by the Island County Health Department at the closed Coupeville Solid Waste Landfills. Results are tracked to identify any statistically significant trends in degradation of ground water quality.
- F. In 1997 The Island County Health Department completed a 1-year nitrate study to determine the spatial extent of nitrate contamination in Island County groundwater. Eighty-three wells were

sampled and a report was prepared discussing the extent of nitrate contamination and proposed remediation measures.

- G. In 1996, the Island County Health Department worked closely with the Department of Ecology on a one-year well monitoring program. Forty-six wells were sampled to understand the seasonal fluctuation of chloride concentrations in areas affected by seawater intrusion.
- H. The Island County Health Department conducted the baseline water quality, water flow, and sediment sampling for both the North Whidbey and Central/South Whidbey Watershed Water Quality Programs. The final reports were completed in April 1998 and January 2001, respectively, and will be used to identify and prioritize surface water quality problems for use in the watershed action plan.

9.4.1.4.2 *Ground Water-Availability. Criteria Option Paper #7*

ICC 8.09 was adopted in September 1990. The provisions of this code constitute minimum requirements of the Island County Health Department governing potable water source and supply and protection of groundwater resources. The elements of this code are outlined elsewhere in this section in more detail.

9.4.1.4.3 *Ground Water Recharge Option Papers #8 and #9*

Critical Recharge Area Protection was incorporated into ICC 8.09 in 1992. All projects with the potential for groundwater contamination shall be evaluated by the Island County Health Department to determine their impacts on the groundwater resource. Highlights and amendments to this code including Critical Recharge Area Protection are documented in more detail elsewhere in this section.

A four (4) year Groundwater Recharge Study was initiated in February 1997 through a cooperative agreement and funding of the Board of Island County Commissioners and the USGS. More detail on the study is provided in the Groundwater Recharge Section.

9.4.1.4.4 *Pollution Source Controls Option Paper #18*

The objective identified in the GWMP was to establish Best Management Practices (BMPs) to reduce the potential for groundwater contamination from specific activities or facilities. ICC 8.09.097, Critical Recharge Area Protection, establishes a method by which land use proposals are reviewed to determine the potential for groundwater contamination. The Island County Health Department has developed a list of accepted BMPs that are both disseminated to the public and applied as "conditions of approval" on land use approvals. The Island County Health Officer has the discretion to impose conditions designed to prevent degradation of groundwater quality or quantity.

Other elements of the GWMP have been implemented by the Island County Health Department on an ongoing basis such as technical assistance and public education.

9.4.1.4.5 ICC 8.09 Potable Water Source and Supply

ICC 8.09 was adopted in September, 1990. The provisions of this Chapter constitute minimum requirements of the Island County Health Department governing potable water source and supply, and protection of groundwater resources. The regulations apply to all potable water supply systems proposed to be used for building permits and subdivisions. ICC 8.09 complies with GMA requirements for verification of water availability and adequacy requirements for building permits and subdivisions (RCW 19.27 and RCW 58.17). In 1992, this code was revised to include Groundwater Resource Protection measures and Critical Recharge Area Protection measures which also comply with GMA requirements. Amendments to the Critical Aquifer Recharge Area Protection are included in this update based upon the data derived from the USGS Recharge study and the Watershed Planning process currently underway.

OVERVIEW OF BUILDING PERMIT AND SUBDIVISION REQUIREMENTS:

- Prior to building permit approval, evidence of an adequate water supply must be provided.
- This code includes requirements for single-family individual wells, including a meter at the wellhead and the establishment of a 100-foot pollution control radius. These conditions exceed state requirements for individual water supply approvals. In addition, other requirements for individual well approvals include: drilling records, water quality testing and pump testing.
- Requirements for public water supply approvals are also more stringent than state requirements. In addition to meeting WAC 246-290 and WAC 246-291, approvals in Island County require compliance with the Island County Coordinated Water System Plan, the State Department of Health and Island County Seawater Intrusion Policy, and ICC 13.03A including metering, conservation and aquifer testing.
- ICC 8.09 also includes requirements on proposed subdivisions assuring water availability prior to the creation of new lots or other land use approvals requiring potable water. These requirements include aquifer tests and other detailed hydrogeologic evaluations when deemed necessary.
- ICC 8.09.099, formerly 9.09.097, Critical Recharge Area Protection Requirements establish a method by which land use proposals are reviewed to determine the potential for groundwater contamination. Critical Recharge Areas have been identified utilizing the "Guidance Document for the Establishment of CARA Ordinances", Department of Ecology, 2000.
- A hydrogeologic site evaluation is required prior to approval of projects identified by the Health Officer as having the potential for groundwater contamination. Conditions may be imposed to prevent degradation of groundwater quality and quantity. BMPs have been adopted for activities where accepted BMPs are available. Project approvals are based on the conditions and/or mitigation plan required by the Island County Health Officer.

9.4.2 OTHER GROUND AND SURFACE WATER PROTECTION STANDARDS

ICC 8.07C On-Site Sewage Systems The goal of groundwater and surface water quality protection is reflected throughout ICC 8.07C. Requirements for sewage system vertical separation to groundwater and horizontal separation to surface water exceed the state standards outlined in WAC 246-272.

9.4.2.1 Island County Hydrogeologist

The Board of Island County Commissioners hired a Hydrogeologist and data entry person in January of 1996. The Hydrogeologist works in the Health Department and current Hydrogeologist activities are described below.

- Detailed data collection, analysis, and mapping of aquifer distribution, aquifer characteristics and geochemistry.
- Construction and calibration of numeric three-dimensional groundwater flow / seawater intrusion models.

Groundwater flow models allow for the development of an understanding of regional water balance issues and the impacts that land use, groundwater withdrawals, and climatic variations have on the groundwater system. The results of these efforts are utilized for both application specific reviews, and long term planning efforts. Modeling efforts are concentrated in areas that are experiencing a combination of projected population growth and seawater intrusion problems. This is a long-term effort with individual studies and models expected to take several years each.

- Groundwater monitoring including a county-wide network of 60 wells that includes water sampling and water level monitoring. Up to 40 additional wells are monitored in area specific studies. Recent activities associated with the county's Watershed Planning efforts also included the collection of water quality samples and groundwater elevation determinations from 378 groundwater wells.

The network will be increased in size (number of wells) and detail (parameters tested) to better assess any trends in water levels or water quality with a projected maximum of 100 wells (excluding area specific studies).

- Review of projects that may impact groundwater resources per ICC 8.09.099.

The decision making process will utilize data collected specific to the proposal, regional hydrogeologic and geochemical analysis, and regional groundwater flow models as they become available.

- Data management and the continued development of a hydrogeologic database.

These tools greatly increase our ability to analyze regional and area-specific trends in water quantity or quality. Through these efforts it is possible to detect and mitigate problems related to resource management before these problems become critical.

- Technical staff to the Watershed Planning process.
- Public outreach and education.

9.4.2.2 Watershed Planning

Since 2000 Island County has been involved in the development of a Watershed Management Plan pursuant to RCW 90.82. Phase II of the watershed plan development included a comprehensive assessment of the groundwater systems supplying potable water for the majority of the population. 379 wells were sampled for water chemistry and water level elevation. This data was being used for the development of the plan in an attempt to define those locations within the county where ample water supplies exist and those areas where the groundwater supply is tenuous.

9.4.2.3 Seawater Intrusion

The Island County Health Department and State Department of Health adopted a joint Seawater Intrusion policy in 1989. The purpose of the policy was to responsibly manage the approval of new public water systems (two or more connections) as well as classify and monitor existing or expanding public water systems with respect to seawater intrusion. Through the implementation of this policy, problems of the degradation of drinking water quality or loss of water source due to seawater intrusion are reduced or eliminated.

This policy established three (3) risk categories of saltwater intrusion risk for all public water systems that exist, or are expanding, or are proposed to be used as a drinking-water source. This policy further establishes standard requirements for water systems within each risk category.

The Watershed Planning process provided an opportunity to review the county's methodology for evaluating groundwater withdrawals in areas defined at risk for seawater intrusion. An outcome of the planning process, based upon data collection and analysis of 378 wells, was the development of a new evaluation tool that focuses on both groundwater chemistry in the form of chlorides and elevation of the aquifer in reference to sea level in order to predict impacts to the resource. This new methodology is included as an update to the county's CAO for the protection of groundwater resources and is described in detail under the Aquifer Recharge Area protection section.

9.4.2.4 Water Related Interested Parties

The citizens in Island County have shown a great deal of interest and support in water related issues. The following organized groups actively support resource management efforts and advise the Board of Commissioners on water related matters:

- Water Resource Advisory Committee (WRAC)
- Community Health Advisory Board (CHAB)
- Environmental Health Advisory Board (EHAT)

9.5 GOALS AND POLICIES

Goal 1. **Facilitate the provision of utilities at levels of service and rates appropriate to accommodate planned development within Island County and its incorporated areas.**

- U 1.1. Encourage communication among the Washington Utilities and Transportation Commission (WUTC), and utilities regulated by the WUTC, regarding the requirements of the Growth Management Act, especially the requirement that service be provided concurrently with or in advance of demand.
- U 1.2. Planning for utilities is the primary responsibility of the utility providers and must be coordinated with the County Comprehensive Plan.

Goal 2. **Ensure that utility service is provided in a manner that is environmentally sensitive, safe, reliable, economical, and aesthetically compatible with surrounding land uses.**

- U 2.1. When reasonable and feasible, promote the co-location of public and/or private utility distribution facilities. Coordinate construction timing to minimize disruptions to the public and disturbances to the environment and archaeological resources, and to reduce the cost to the public for utility delivery.
- U 2.2. Use utility corridors for shared uses, such as trails, open space, and recreation.
- U 2.3. Provide timely and effective notification to utilities providers of road construction, and of maintenance and upgrades of existing roads to facilitate coordination of public and private utility trenching activities.
- U 2.4. Encourage efficient, cost-effective and reliable utility service by ensuring that land will be made available for the locations of utility lines, including location within public transportation corridors, consistent with franchise terms and conditions including the possible payment of annual fees.
- U 2.5. Coordinate land use and facility planning to allow eventual siting and construction of distribution lines within right-of-ways which are being dedicated or within roads which are being constructed or reconstructed.
- U 2.6. Encourage system design practices intended to minimize the number and duration of interruptions to customer service, including underground utility lines where practical.
- U 2.7. Facilitate and encourage conservation of resources to delay the need for additional utility facilities.
- U 2.8. Once in place, continuing maintenance of utility facilities may disturb sensitive areas. Utility facilities should therefore be located outside such sensitive areas.

2016 UPDATES

NEW New goals and policies are indicated with **red italicized** numbering

REVISED Goals and policies that have been revised (more than minor text edits) are indicated with **blue italicized** numbering

- U 2.9. While harmful biological effects due to proximity to utility facilities such as electrical transmission lines or cellular tower sites have not been conclusively demonstrated, significant concerns remain, and study of the issues is ongoing. To address these environmental and health concerns, the County and affected utilities should:
 - U 2.9.1. Promote siting of facilities with respect for natural features, sensitive areas, and water quality and quantity.
 - U 2.9.2. Monitor research into the health effects from utility facilities.
 - U 2.9.3. Adopt standards as necessary to protect the public from known health hazards.
- U 2.10. Consider changes to regulations and policies as appropriate to allow new utility technologies.

Goal 3. Process permits and approvals for utility facilities in a fair and timely manner, and in accordance with predictable development regulations.

- U 3.1. Implement timely, predictable, and reasonable permit processes for utility service.
- U 3.2. Review and amend existing regulations as necessary to allow maintenance, repair, installation and replacement of utilities, where consistent with the overall goals of this Comprehensive Plan.
- U 3.3. Work with utility providers to enhance County and private Geographic Information Systems (GIS) development to help increase efficiency in permit processes.
- U 3.4. Exercise flexibility in reviewing proposals using innovative new technologies.

Goal 4. Improve accessibility to government through interactive audio/visual communication, considering the geography of Island County.

Goal 5. Manage and protect ground water withdrawals and provide for resource protection through a common goal of non-degradation for existing and future residents of Island County.

- U 5.1.** Water utilities must work with the Island County Health Department, and Washington Departments of Health and Ecology to make best use of available data and new technology.
- U 5.2.** When converting land to a use that requires water availability, refer to policy NR 12.2 in the Natural Resources Element.

Goal 6. Manage water systems in a way that protects the quantity and quality of groundwater resources for existing and future residents of Island County.

- U 6.1.** Provide water utilities with incentive programs to encourage participation in water conservation and aquifer recharge area protection programs.
- U 6.2. Continue to participate with State agencies and with the public in developing, updating, and implementing tools to improve management of Island County's limited ground water resources, such as the Coordinated Water System Plan, the Ground Water Management Program, and the Water Resource Management Plan.
- U 6.3. Development must not be allowed to outstrip known water supplies. Consideration shall be given to the availability, susceptibility, and vulnerability of known ground water resources when siting new development and making land use decisions, per ICC 8.09 and related policies.
- U 6.4.** Water utilities must follow NR 7.1.2 in the Natural Resources Element.
- U 6.5. Continue to provide for adequate groundwater analysis, commensurate to the scale and nature of the proposed development.
- U 6.6.** Water utilities must follow NR 9.1 in the Natural Resources Element.

Goal 7. **Ensure that Island County plans for water systems in a manner that utilizes the best available information regarding water resources, so that the resource will be preserved for current and future use.**

- U 7.1. Implement the existing Coordinated Water System Plan (CWSP) to effectively guide the development, expansion, combination and coordination of water systems in the County.
- U 7.2. Island County will prohibit service overlaps for the expansion of existing water systems and the formation of new water systems per the CWSP.
- U 7.3. New water systems will be required to meter and document water usage at the source and impose conservation strategies and implementation measures per the CWSP.
- U 7.4. Water systems will be encouraged to upgrade facilities to provide adequate water distribution, pressure, storage, and treatment for domestic use and fire protection.
- U 7.5.** Provide water conservation education to water utilities.
- U 7.6. Development will be restricted unless adequate water supplies are available per ICC 8.09 and related policies.
- U 7.7. Prior to any final plat approval, water availability must be reviewed and approved in accordance with ICC 8.09 and other related water policies.
- U 7.8.** Reuse of water, recharge of aquifers and alternative storage systems will be encouraged in water system designs.
- U 7.9. Incentives will be offered for the retrofit of existing fixtures with water conservation fixtures.