



SECTION B ELEMENT 8 UTILITIES

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ELEMENT 8. UTILITIES

8.1 Introduction

The Utilities Element includes the current and projected conditions of utilities in San Juan County. Utility services included in this Element are electricity, propane, telecommunications, internet and cable. San Juan County does not provide utility services discussed in this Element; therefore, this Element relies on information shared by utility providers.

This Element establishes goals and policies to guide the provision of utility services. Goals and policies aim to facilitate coordinated, cost-effective provision of services, planning, and construction by utility service providers in a manner consistent with the goals and policies of other elements of the *Comprehensive Plan (Plan)*. This document also identifies opportunities and challenges for utility services through the 2036 planning period. These opportunities and challenges stem from projected population increases, new technologies, and climate change.

The Utilities Element reflects certain key assumptions:

1. Utility providers are the best identifiers of utility problems and the solutions needed to overcome them;
2. Level of service (LOS) standards, concurrency, and capacity requirements do not apply to utility services addressed in this element;
3. Privately owned utilities are not public facilities although they provide a public service. Each utility bears the responsibility for providing services to San Juan County residents within the guidelines of their own policies and in a manner consistent with the regulatory bodies having jurisdiction over them; and
4. County residents ultimately bear a large portion of the costs associated with the provision of utility services through utility rates, taxes, land development costs, and impacts to environmental and aesthetic values.

This Element supports the *Plan* Vision and fulfills the requirements of the Growth Management Act (GMA) for utilities planning. Regarding energy, the Vision states, "Our community strives for energy independence...we use renewable energy." Regarding communication systems, the Vision affirms that "Advanced communication

infrastructure is encouraged...we encourage new ideas and new technology... [and] communication systems support our economy.”

The Utilities Element is oriented toward meeting the needs of the people of the County in the midst of growth, climate change, and ever-advancing technologies. The GMA calls for comprehensive plans to include “the general location, proposed location, and capacity of all existing and proposed utilities” in RCW 36.70A.070(4). By fulfilling the GMA requirement, the County positions itself to make effective use of existing utilities infrastructure, and to be responsive to inevitable change. Together, this Element and Appendix 8, Utilities Inventory meet this requirement. Appendix 8 contains the in-depth inventory of utilities.

8.2 Relationship to Other *Plan* Elements

The siting and provision of utility services interacts with other topics in the *Plan*. Utilities information can be found in both the Utilities and Capital Facilities Elements and Inventories. Water and sewer utilities are discussed in the Capital Facilities Element and Inventory, and are subject to concurrency requirements and Level of Service (LOS) standards. Services discussed in the Utilities Element and Inventory are not subject to concurrency requirements or LOS standards. The siting of utilities facilities, such as propane storage, electrical substations, and telecommunication towers, is a land use issue. Telecommunication services are closely tied to issues discussed in the Economic Development Element. The Utilities Element must be consistent with other *Plan* elements. No element can be enacted independently without consideration of other elements.

8.3 Current Conditions and Future Outlook

The following subsections summarize existing utilities conditions and provide a look at what the future may hold for the provision of those services. The outlook is based on the assumption that the County will grow according to the population projections in *Plan* Appendix 1. Both existing and future utility services are and will be operating in the context of climate change and the development of new energy and communication technologies.

8.3.1 Electricity

Current Conditions

Orcas Power and Light Co-operative (OPALCO) provides electricity in the County. The majority of electricity is sourced from hydropower on the mainland. Bonneville Power Administration and Puget Power generates and distributes it. Local renewable energy sources, such as solar power, currently generate about three percent of electricity. In 2021, OPALCO served about 15,000 accounts on 21 islands. OPALCO estimates an annual increase of 0.5 percent for the number of residential accounts and 2.0 percent for commercial accounts.



Energy Outlook

Globally, we face a climate crisis induced by human-generated greenhouse gas emissions. In the Pacific Northwest, we have observed wildfires, drought, lack of snowpack, and increased ocean acidification in recent years¹. Governor Inslee's Executive Order 14-04 includes key areas for addressing climate change, including reducing carbon emissions and improving energy efficiency². San Juan County can reduce carbon emissions by increasing reliance on electricity if it comes from clean, renewable sources, and is used as efficiently as possible. Transportation and home heating/cooling are two major sources of energy expenditure in the County (and anywhere else). Thirty five percent of county residential energy use is for heating, and over half of energy use is for transportation, which accounts for 45 percent of Washington State fossil fuel emissions³. Electric transportation costs about 75 percent less than fossil fueled transportation, helping keep dollars in the local economy⁴.

The Washington State 2021 Energy Strategy estimates the electrification of transportation and heating will nearly double load by 2050. Over this same period, the electrification of transportation and heating is estimated to reduce greenhouse gas emissions by 72 percent by 2050⁵. The number of Electric Vehicles (EVs) in the county increased by 65 percent in 2019 as they became less expensive and provided longer

¹ <https://fortress.wa.gov/ecy/publications/documents/1902031.pdf>, pg. x.

² https://www.governor.wa.gov/sites/default/files/exe_order/eo_14-04.pdf

³ OPALCO analysis, US Department of Energy, WA Department of Ecology

⁴ OPALCO analysis, US Department of Transportation, WA State Department of Transportation

⁵ The Brattle Group

ranges⁶. The State has reinstated tax breaks for non-luxury electric vehicles in an effort to increase their prevalence and reduce transportation emissions.

In 2019, Washington State Ferries (WSF) announced that it would begin transitioning its diesel ferry fleet to hybrid-electric. The anticipated 2030 ferry electrification will add load as well. Ferry electrification is an effort to drastically reduce greenhouse gas emissions. Currently, WSF generates fifty percent of greenhouse gas emission from working boats in Puget Sound (220,000 metric tons annually), despite making up only six percent of such boats⁷.

While power in Washington may be cleaner than in other states that rely heavily on fossil fuels to generate electricity, hydropower is not without environmental impact. Chinook Salmon populations have been in decline in both dammed and undammed river systems in the northwest. People and Orca Whales in the Salish Sea rely on Chinook as a food source. That said, Washington hydro power is cleaner than solar, wind, coal and natural gas and most other sources of energy, and helps reduce the impacts of climate change on ocean warming and acidification, which is driving ecosystem collapse, impacting thousands of species⁸. Hydro is an essential resource in the 2019 WA Clean Energy Transformation Act (CETA) and Washington 2021 Energy Strategy, for firming intermittent renewables like solar and wind.



Photo: Thomas Noland

There is a push toward energy independence from the mainland. Renewable energy resource costs have been falling, while mainland pricing has been slowly rising. The point at which they cross is called *grid parity*. In other words, grid parity is the point at which an emerging technology becomes economically viable. At that point, the emerging technology has increasing cost savings compared to the legacy technology.

⁶ [WA State Department of Transportation](#)

⁷ <https://medium.com/wagovernor/clean-transportation-advances-with-hybrid-electric-ferries-85d2db1f902b>

⁸ UN IPCC https://archive.ipcc.ch/pdf/special-reports/srren/SRREN_FD_SPM_final.pdf

Once a resource is at grid parity or better, it can be added into OPALCO's energy portfolio to replace or moderate the cost of legacy energy sources. OPALCO expects that local renewable energy resources will become competitive with mainland power wholesale electric rates and reach grid parity around 2028. OPALCO is transitioning to a more locally generated energy mix, which could include member-generated energy (solar, wind, micro-hydro), Community Solar, utility-scale solar, tidal energy, and other new technologies. OPALCO expects that up to fifty percent of County energy could be generated locally by 2040⁹.



Photo: Shutterstock

The impacts from climate change, changing carbon emission regulations, and the restructuring of the electric transmission market throughout the Pacific Northwest will impact the electric grid serving the County. This may increase the potential for unplanned outages and rolling blackouts. The need for locally generated electricity from wind, solar, tidal, and other sources are vitally important to prevent economic

disruption and preserve the County's environment. The County Vision states, "Our community strives for energy independence...we use renewable energy." To achieve this vision will require significant land and water areas to host local renewable energy and tidal power sites. Development of Joint Use Wireless Facilities fostered the rapid development of reliable ubiquitous cellular service in the county, improving healthcare, emergency services, public safety communications and economic activity. County land use designations should be similarly reviewed and updated for siting renewables. To increase energy independence from the mainland will require predictable permitting processes, to ensure timely achievement of grant funding and site development. This is particularly so for agri-solar applications on Rural Farm Forest and Ag land. Just as improved wireless land use designations fostered rapid improvement of wireless services in the county, updating land use designations for local renewable energy sites can help accelerate achieving the vision of "energy independence."

⁹ [OPALCO Integrated Resource Plan](#)

Siting electric facilities serving locally generated electricity and its supporting infrastructure can enable the deployment of an electric ferry system and the electrification of the state's transportation system.

More information about the future of electricity in San Juan County can be found in OPALCO's planning documents. OPALCO's long-range plan contains an analysis of capacity development needed to meet future demands. Additionally, their four-year Construction Work Plan contains load forecasts and information on construction projects.

8.3.2 Propane

There are no natural gas lines in San Juan County. Currently, the population relies heavily on propane. Propane tanks are not allowed on Washington State Ferries. Propane utility providers barge propane from the mainland to their distribution centers on San Juan, Orcas, and Lopez islands.

The County should seek to decrease demand for propane as the population increases by encouraging alternative renewable energy sources, such as home solar energy installations, and changes in State building code and greenhouse gas emission reduction requirements to meet Washington State Greenhouse Gas targets for energy efficiency.

8.3.3 Communications

San Juan County encourages the development of advanced communication infrastructure. Reliable, up-to-date communication services support everything from healthcare and public safety, to economic opportunity and modern lifestyles. Geographic isolation and relatively small resident populations have historically inhibited the extension of telecommunication services to some islands in the County. Today, Fiber and LTE are providing faster and more expansive communication services.

- **Fiber:** The availability of fiber optic based services has grown extensively throughout the County in the past decade, meeting the growing needs of the electric grid, emergency communications, and residential and business broadband and cell phone service. Approximately half of County addresses are located within a serviceable distance of existing fiber optic facilities. As demand for higher bandwidth and additional

improvements are made to public infrastructure, the availability of fiber optic services is expected to continue to grow.

- **Voice over Internet Protocol (VoIP):** Anyone with a reliable internet connection can purchase VoIP service, which is becoming more common as internet access and speed increases. It is the predominant method for non-wireless voice communications around the nation, particularly for businesses.
- **Fixed Wireless:** Fixed wireless provides high speed internet service throughout the County by multiple providers.
- **Fixed Wireless – Cellular Service:** All major cellular carriers have coverage to an extent in the County; however, the geography currently limits coverage in some areas. For some residents and visitors, lack of cell service poses a safety concern because it would be difficult to call for help in the case of an emergency.
- **Plain Old Telephone Service (POTS):** Use of POTS has decreased in the recent years as consumers discontinue landline service or switch to VoIP.
- **Cable:** Cable internet and television services are available from multiple providers in parts of Friday Harbor and Orcas Island. Use of cable services is declining as fiber and wireless broadband become more popular.

8.4 Key Challenges

The key challenges for utilities provided below are based on the utilities inventory in *Plan* Appendix 8 and the energy outlook. Considering the assessment of electricity, propane, and communications services, the utilities goals and policies in the following section put an emphasis on:

- Preparing to serve the County's 2036 forecasted population in *Plan* Appendix 1;
- Meeting energy and telecommunications needs within and outside of population centers;
- Reducing greenhouse gas emissions;
- Reducing the environmental impact of all forms of energy we use;
- Achieving the vision of energy independence;
- Increasing energy efficiency; and
- Working with the challenges presented by the islands' unique geography.

8.5 Goals and Policies

Utilities goals and policies guide San Juan County's actions affecting the provision of utility services. This section aims to result in meeting San Juan County's current and projected needs for energy and communications in a way that is cost-effective, efficient,

appropriate for the character of the islands, and responsive to climate change. These goals and policies are informed by the 2005 Utilities Element, other *Plan* elements, information from utilities providers, community feedback, and by state climate directives.

8.5.A General Goals and Policies

The general goals and policies in this Element address the planning, location and siting of utilities; services to new development; and environmental protection. These issues are common among all utility services.

Goal 1

Coordinate planning efforts between the County and utility service providers and encourage the regular exchange of information to aid utility service providers in anticipating and responding to growth, and maintaining consistency between utility service plans and County plans.

Policies

1. Provide utility service providers with appropriate plans and mapped information to help establish a common County-wide base map for utilities planning.
2. Obtain maps and facility inventories, with text designating the approximate location of existing facilities and the general location of proposed new facilities, from utility service providers and integrate them into the County's Geographic Information System (GIS).
3. Provide utility service providers with the six year capital improvement financing plan to aid in their ability to coordinate necessary system improvements.
4. Cooperate with utility providers in siting facilities for new and alternative technologies to save money and promote reliability of existing utilities by conserving existing energy resources, while promoting a feasible conversion to energy-saving technologies.
5. Cooperate with utility service providers in future comprehensive planning efforts to evaluate actual patterns and rates of growth and compare them to demand forecasts.



Goal 2

Allow for the timely and cost-effective provision of utility services to County residents by enabling inter-agency joint project planning and ensure the availability and use of utility corridors within public rights-of-way for the placement of utility service facilities.

Policies

1. Facilitate inter-agency coordination and planning for joint trenching, installation, upgrade, repair, maintenance, and construction of new utility facilities between the Public Works Department, the various utility service providers, and other agencies.
2. Provide timely notification of proposed projects in public rights-of-way to utility service providers and coordinate the placement of both above- and underground utility facilities, which are necessary to provide adequate service, including transformers, switch vaults, telephone pedestals, utility equipment cabinets, and other necessary utility equipment or structures.
3. Allow for utility services in new dedications for public rights-of-way.
4. Encourage consultation between permit applicants and utility providers during the permitting process for installation of utility systems.

Goal 3

Foster predictability and timeliness in processing permit applications for utilities to allow for necessary development, maintenance, repair, improvement, and expansion of utility facilities in a timely and efficient manner.

Policies

1. Review permitting processes to identify ways to improve predictability, timeliness, and efficiency of utility permitting.

Goal 4

Protect rural character while also providing for the location and extension of necessary utility facilities.

Policies

1. Require new utility distribution lines for new development to be installed underground. Services for single-family residential construction on an existing parcel may connect with existing overhead utility facilities.
2. Require new development to be designed so that utility easements are accessible and have sufficient capacity for installation of the full range of required utility services.
3. Require landscaping to buffer adjacent uses for new utility installations excluding aboveground utility facility development and distribution or transmission corridors when located outside a public right-of-way.

4. Locate and site utility facilities to minimize negative impacts to the rural character and natural environment.
5. New utility generation facilities, transmission facilities, substations and submarine transmission cable terminal facilities should be located and sited to minimize adverse impacts to the County's shorelines and rural character.

Goal 5

Protect and preserve natural habitats and environments while also providing for the location and extension of necessary utility facilities.

Policies

1. Locate new utility facilities away from, or construct them in a manner compatible with, critical areas, resource lands, and shorelines.
2. Condition the approval of new utility facilities to avoid or mitigate any significant adverse impacts.
3. Ensure that utility service providers are responsible for costs such as those associated with damage caused to the environment and public rights-of-way so that providers will seek to minimize those costs in their planning, decision-making, and project execution.
4. Recognize that the geographic character of the County requires access to and the ability to cross shorelines and waterways to connect utilities and that utility facilities must occupy and traverse a broad range of areas and land use designations.

8.5.B Utility-Specific Goals and Policies

Electricity



Goal 6

Minimize the environmental impacts of electricity production and use while promoting energy independence.

Policies

1. Encourage utility service providers to explore innovative and alternative methods of producing energy.
2. Work with the San Juan County Conservation District and OPALCO to promote community solar projects and provide technical assistance and incentives to increase individual home solar installations.

3. Encourage utility providers, Washington State Department of Transportation (WSDOT), and the public to reduce greenhouse gas emissions.
4. Adopt regulations that allow facilities that support the distribution of electricity for cleaner transportation including electric vehicles and electric ferries.
5. Encourage the provision of electric vehicle chargers at key destinations throughout the County.
6. Increase energy efficiency of buildings and systems on the islands by:
 - Providing educational materials and supporting education on energy efficiency in buildings, beyond State energy efficiency requirements; and
 - Installing solar panels on new and updated County buildings when feasible.
7. Ensure that solar installations are sited and designed in a manner that minimizes impacts on agricultural land, allows for flexibility in future agricultural activity and maximizes potential for multiple benefits from “agrivoltaics”.



Goal 7

Collaborate with the Orcas Power and Light Co-Operative (OPALCO) in achieving its goals for local energy resiliency.

Policies

1. Assist OPALCO when necessary to respond to new, unforeseen conditions and technologies that may affect utility operations and facilities.
2. Coordinate planning to allow for the appropriate location and siting of all necessary existing and future facilities including overhead, underground, and submarine transmission and distribution systems, substations, cable terminals, standby and generation, and any other necessary equipment or structures.
3. Locate and site new upland power transmission facilities, substations and submarine transmission cable terminal facilities to minimize adverse impacts to the rural character, shorelines and natural environment of the County.
4. Allow pilot programs to evaluate new renewable energy sources consistent with the goals and policies of this *Plan* and that comply with all regulations.
6. Provide opportunities within land use designations for the development and use of renewable energy resources which are compatible with natural environment and rural character.
7. Support the transition toward energy independence from the mainland by up to 50 percent by the year 2040.

Telecommunications

Goal 8

Promote the widespread availability of communication systems to facilitate communication among members of the public, public institutions, government agencies, and businesses, and to promote the public service and safety advantages and economic opportunities afforded to the community due to the availability of state-of-the-art telecommunications technology.

Policies

1. Identify telecommunications facilities developed and operated expressly to carry out emergency services as essential public facilities.
2. Promote the public service, safety advantages and economic opportunities of widespread availability of state-of-the-art telecommunications technology by reviewing potentially suitable personal wireless facility locations as needed.
3. Support development of telecommunications facilities to promote public safety and economic opportunity.

Propane

Goal 9

Regulate and assure safe handling and distribution of propane within the County.

Policies

1. Identify appropriate land use designations and safety criteria for the siting of bulk fuel storage.
2. Support the use of historic barge landings that have served as landing sites for transporting bulk fuels.
3. Work with the Ports, the Town of Friday Harbor, WSDOT and propane distributors to develop safe transportation and circulation routes for the transport of propane.