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From: Jay Kimball <jay@mountaincedar.com>
Sent: Tuesday, March 1, 2022 1:33 PM
To: Comp Plan Update
Cc: Sophia Cassam
Subject: OPALCO comments on Comp Plan elements
Attachments: Section%20B_Ele_8_Uilities_Draft_2021-01_06-OPALCOedits.docx; 2020-04-03
_Appendix_8_Uilities_Inventory-OPALCOedits.docx

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On behalf of OPALCO, thank you for the opportunity to review the latest comp plan element updates.

OPALCO has suggested edits for the *Utilities* and *Utilities Inventory* documents. Edits were done with Word “change tracking” on to make it easy to identify the edits.

Feel free to contact me if clarification is needed.

All the best,

Jay Kimball
360-376-5360

**COMPREHENSIVE PLAN
SECTION B, ELEMENT 8**

DRAFT

UTILITIES ELEMENT

~~November 2005~~

January 6, 2021

DRAFT

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ELEMENT 8

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UTILITIES ELEMENT

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1 **8.1 INTRODUCTION**

2
3 **8.1.A Purpose**

4
5 The purpose of the Utilities Element is to set goals and policies which provide guidelines for the
6 provision of utility services in San Juan County, and to facilitate coordinated, cost-effective
7 planning and construction by the County and by individual utility service providers in a manner
8 consistent with the goals and policies set forth in this *Plan*. This element consists of General Goals
9 and Policies, Utility Specific Goals and Policies, and a Utilities Inventory in Appendix 8.

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

14
15 This Element establishes goals and policies to guide the provision of utility services. Goals and policies
16 aim to facilitate coordinated, cost-effective provision of services, planning, and construction by utility
17 service providers in a manner consistent with the goals and policies of other elements of the
18 Comprehensive Plan (Plan). This document also identifies opportunities and challenges for utility services
19 through the 2036 planning period. These opportunities and challenges stem from projected population
20 increases, new technologies, and climate change.

21
22 The Utilities Element reflects certain key assumptions:

- 23
24 1. Utility providers are the best identifiers of utility problems and the solutions needed to overcome
25 them;_;
26
27 2. Level of service (LOS) standards, concurrency, and capacity requirements do not apply to utility
28 services addressed in this element;_;
29
30 3. Privately owned utilities are not public facilities although they provide a public service. Each utility
31 bears the responsibility for providing services to San Juan County residents within the guidelines
32 of their own policies and in a manner consistent with the regulatory bodies having jurisdiction
33 over them;_ and
34
35 4. County residents ultimately bear the majority of the costs associated with the provision of utility
36 services through utility rates, taxes, land development costs, and impacts to environmental and
37 aesthetic values.
38

39 This Element supports the *Plan* Vision and fulfils the requirements of the Growth Management Act (GMA)
40 for utilities planning. Regarding energy, the Vision states, “Our community strives for energy
41 independence...we use renewable energy.” Regarding communication systems, the Vision affirms that
42 “Advanced communication infrastructure is encouraged...we encourage new ideas and new technology...
43 [and] communication systems support our economy.”

44
45 The Utilities Element is oriented toward meeting the needs of the people of the County in the midst of
46 growth, climate change, and ever-advancing technologies. The GMA calls for comprehensive plans to
47 include “the general location, proposed location, and capacity of all existing and proposed utilities” in

1 RCW 36.70A.070(4). By fulfilling the GMA requirement, the County positions itself to make effective use
2 of existing utilities infrastructure, and to be responsive to inevitable change. Together, this Element and
3 Appendix 8, Utilities Inventory meet this requirement. Appendix 8 contains the in-depth inventory of
4 utilities.

5 8.2 RELATIONSHIP TO OTHER PLAN ELEMENTS

6
7 The siting and provision of utility services interacts with other topics in the *Plan*. Utilities information can
8 be found in both the Utilities and Capital Facilities Elements and Inventories. Water and sewer utilities
9 are discussed in the Capital Facilities Element and Inventory, and are subject to concurrency requirements
10 and Level of Service (LOS) standards. Services discussed in the Utilities Element and Inventory are not
11 subject to concurrency requirements or LOS standards. The siting of utilities facilities, such as propane
12 storage, electrical substations, and telecommunication towers, is a land use issue. Telecommunication
13 services are closely tied to issues discussed in the Economic Development Element. The Utilities Element
14 must be consistent with other *Plan* elements. No element can be enacted independently without
15 consideration of other elements.

16 8.3 CURRENT CONDITIONS AND FUTURE OUTLOOK

17
18
19 The following subsections summarize existing utilities conditions and provide a look at what the future
20 may hold for the provision of those services. The outlook is based on the assumption that the County
21 will grow according to the population projections in *Plan* Appendix 1. Both existing and future utility
22 services are and will be operating in the context of climate change and the development of new energy
23 and communication technologies.

24 8.3.1 Electricity

25 Current Conditions

26
27
28
29 Orcas Power and Light Co-operative (OPALCO) provides electricity in the County. The majority of
30 electricity is sourced from hydropower on the mainland. Bonneville Power Administration and Puget
31 Power generates and distributes it. Local renewable energy sources, such as solar power, currently
32 generate about ~~one-three~~ percent of electricity. In ~~2019~~2021, OPALCO served ~~about 1415,913-000~~
33 accounts on 21 islands. OPALCO estimates an annual increase of 0.5 percent for the number of residential
34 accounts and 2.0 percent for commercial accounts.

35 Energy Outlook

36
37
38 Globally, we face a climate crisis induced by human-generated greenhouse gas emissions. In the Pacific
39 Northwest, we have observed wildfires, drought, lack of snowpack, and increased ocean acidification in
40 recent years¹. Governor Inslee's Executive Order 14-04 includes key areas for addressing climate change,
41 including reducing carbon emissions and improving energy efficiency². San Juan County can reduce
42 carbon emissions by increasing reliance on electricity if it comes from clean, renewable sources, and is
43 used as efficiently as possible. Transportation and home heating/cooling are two major sources of energy

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

1 expenditure in the County (and anywhere else). Thirty five percent of county residential energy use is for
2 heating, and over half of energy use is for transportation, which accounts for ~~41-45~~ percent of Washington
3 State fossil fuel emissions³. Electric transportation costs about 75 percent less than fossil fueled
4 transportation, helping keep dollars in the local economy⁴.

5
6 The ~~Washington State 2021 Energy Strategy estimates the~~ electrification of transportation and heating
7 ~~are expected to will nearly increase load by 37 percent by 2030 double load by 2050. Over this same period,~~
8 ~~the electrification of transportation and heating is estimated to and~~ reduce greenhouse gas emissions by
9 ~~72 percent by 2050~~⁵. The number of Electric Vehicles (EVs) in the county increased by 65 percent in 2019
10 as they became less expensive and provided longer ranges⁶. The State has reinstated tax breaks for non-
11 luxury electric vehicles in an effort to increase their prevalence and reduce transportation emissions.

12
13 In 2019, Washington State Ferries (WSF) announced that it would begin transitioning its diesel ferry fleet
14 to hybrid-electric. The anticipated 2030 ferry electrification will add load as well. Ferry electrification is
15 an effort to drastically reduce greenhouse gas emissions. Currently, WSF generates fifty percent of
16 greenhouse gas emission from working boats in Puget Sound (220,000 metric tons annually), despite only
17 making up only six percent of such boats⁷.

18
19 While power in Washington may be cleaner than in other states that rely heavily on fossil fuels to generate
20 electricity, hydropower is not without environmental impact. ~~Chinook Salmon populations have been in~~
21 ~~decline in both dammed and undammed river systems in the northwest. Dams that generate hydropower~~
22 ~~are harmful to Chinook Salmon populations, which~~ Orca Whales in the Salish Sea rely on Chinook as a food
23 source. That said, WA hydro power is cleaner than solar, wind, coal and natural gas and most other sources
24 of energy, and helps reduce the impacts of climate change on ocean warming and acidification, which is
25 driving ecosystem collapse, impacting thousands of species⁸. Hydro is an essential resource in the 2019
26 WA Clean Energy Transformation Act (CETA) ~~and WA 2021 Energy Strategy~~, for firming intermittent
27 renewables like solar and wind.

28
29 There is a push toward energy independence from the mainland. Renewable energy resource costs have
30 been falling, while mainland pricing has been slowly rising. The point at which they cross is called *grid*
31 *parity*. In other words, grid parity is the point at which an emerging technology becomes economically
32 viable. At that point, the emerging technology has increasing cost savings compared to the legacy
33 technology. Once a resource is at grid parity or better, it can be added into OPALCO's energy portfolio to
34 replace or moderate the cost of legacy energy sources. OPALCO expects that local renewable energy
35 resources will become competitive with mainland power wholesale electric rates and reach grid parity
36 around ~~2025~~2028. OPALCO is transitioning to a more locally generated energy mix, which could include
37 member-generated energy (solar, wind, micro-hydro), Community Solar, utility-scale solar, tidal energy,
38 and other new technologies. OPALCO expects that up to fifty percent of County energy ~~will~~ could be
39 generated locally by 2040⁹.

3
40

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

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

⁹ OPALCO Integrated Resource Plan

1 The impacts from climate change, changing carbon emission regulations, and the restructuring of the
2 electric transmission market throughout the Pacific Northwest will impact the electric grid serving the
3 County. This may increase the potential for unplanned outages and rolling blackouts. The need for locally
4 generated electricity from wind, solar, tidal, and other sources are vitally important to prevent economic
5 disruption and preserve the County’s environment. **The County Vision states, “Our community strives for**
6 **energy independence...we use renewable energy.” To achieve this vision will require significant land and**
7 **water areas to host local renewable energy and tidal power sites. Development of- Joint Use Wireless**
8 **Facilities fostered the rapid development of reliable ubiquitous cellular service in the county, improving**
9 **healthcare, emergency services, public safety communications and economic activity. County land use**
10 **designations should be similarly reviewed and updated for siting renewables. To increase energy**
11 **independence from the mainland will require predictable permitting processes, to ensure timely**
12 **achievement of grant funding and site development. This is particularly so for agri-solar applications on**
13 **Rural Farm Forest and Ag land. Just as improved wireless land use designations fostered rapid**
14 **improvement of wireless services in the county, updating land use designations for local renewable energy**
15 **sites can help accelerate achieving the vision of “energy independence.”**

16
17 Siting electric facilities serving locally generated electricity and its supporting infrastructure can enable
18 the deployment of an electric ferry system and the electrification of the state’s transportation system.

19
20 More information about the future of electricity in San Juan County can be found in OPALCO’s planning
21 documents. OPALCO’s long-range plan contains an analysis of capacity development needed to meet
22 future demands. Additionally, their four-year Construction Work Plan contains load forecasts and
23 information on construction projects.

24 25 **8.3.2 Propane**

26
27 There are no natural gas lines in San Juan County. The population relies heavily on propane. Propane
28 tanks are not allowed on Washington State Ferries. Propane utility providers barge propane from the
29 mainland to their distribution centers on San Juan, Orcas, and Lopez islands. The two propane providers
30 in San Juan County are Inter-Island Propane and San Juan Propane. Inter-Island Propane recently
31 established a facility on Orcas Island, which is subject to County inspection prior to starting operations.

32
33 The demand for propane will likely increase as the County’s population increases. However, alternative
34 renewable energy sources, such as home solar energy installations, and changes in State building code
35 **and greenhouse gas emission reduction** requirements to meet WA State Greenhouse Gas targets for
36 energy efficiency may reduce the per capita demand for propane in the future.

37 38 **8.3.3 Communications**

39
40 San Juan County encourages the development of advanced communication infrastructure. Reliable, up-
41 to-date communication services support everything from healthcare and public safety, to economic
42 opportunity and modern lifestyles. Geographic isolation and relatively small resident populations have
43 historically inhibited the extension of telecommunication services to some islands in the County. Today,
44 Fiber and LTE are providing faster and more expansive communication services.

- 45
46
 - 47 **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

1 residential and business broadband and cell phone service. Approximately half of County addresses
2 are located within a serviceable distance of existing fiber optic facilities. As demand for higher
3 bandwidth and additional improvements are made to public infrastructure, the availability of fiber
4 optic services are expected to continue to grow. Fiber is provided in San Juan County by Rock Island
5 and Century Link.

- 7 ▪ **Voice over Internet Protocol (VoIP):** Anyone with a reliable internet connection can purchase VoIP
8 service, which is becoming more common as internet access and speed increases. It is the
9 predominant method for non-wireless voice communications around the nation, particularly for
10 businesses. Rock Island is the primary provider of VoIP in the County.
- 12 ▪ **Fixed Wireless - Long-Term Evolution (LTE):** LTE is a standard for wireless broadband
13 communication for mobile devices and data terminals. It increases the capacity and speed using a
14 different radio interface together with core network improvements. LTE utilizes cellular technology
15 to provide high-speed data and voice service has been deployed throughout the County. It provides
16 access to phone and internet where fiber is currently unavailable, including eighteen non ferry-
17 served islands. Fixed wireless is primarily provided by Rock Island in San Juan County.
- 19 ▪ **Fixed Wireless –Cellular Service:** All major cellular carriers have coverage to an extent in the
20 County; however, the geography currently limits coverage in some areas. For some residents and
21 visitors, lack of cell service poses a safety concern because it would be difficult to call for help in the
22 case of an emergency. T-Mobile is the most extensive provider of cellular service in the County.
- 24 ▪ **Plain Old Telephone Service (POTS):** The main provider of POTS is CenturyLink. Use of POTS has
25 decreased in the recent years as consumers discontinue landline service or switch to VoIP.
- 27 ▪ **Cable:** Cable internet and television services are available from CenturyLink, Zito Media, and POGO
28 Zone in parts of Friday Harbor and Orcas Island. Use of cable services is declining as fiber and
29 wireless broadband becomes more popular.

31 8.4 KEY CHALLENGES

32
33 The key challenges for utilities provided below are based on the utilities inventory in *Plan* Appendix 8 and
34 the energy outlook. Considering the assessment of electricity, propane, and communications services,
35 the utilities goals and policies in the following section put an emphasis on:

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

44 8.5 GOALS AND POLICIES

1 Utilities goals and policies guide San Juan County’s actions affecting the provision of utility services. This
2 section aims to result in meeting San Juan County’s current and projected needs for energy and
3 communications in a way that is cost-effective, efficient, appropriate for the character of the islands, and
4 responsive to climate change. These goals and policies are informed by the 2005 Utilities Element, other
5 Plan elements, information from utilities providers, community feedback, and by state climate directives.
6

7 **8.5.A General Goals and Policies**

8
9 The ~~G~~general ~~G~~goals and ~~P~~policies in this Element address the planning, location and siting of utilities;
10 services to new development;
11 and environmental protection. These issues are common among all utility
12 services.

13 ~~8.2.A Long-range Planning~~

14 ~~**Goal 1.** Goal: To e~~ Coordinate planning efforts between San Juan the County and utility service
15 providers and encourage the regular exchange of information plans, maps, and other pertinent
16 information; ~~to aid utility service providers in anticipating and responding to growth by establishing land~~
17 ~~use policies and regulations to direct and manage future growth;~~ and to maintain consistency between
18 utility service plans and San Juan County plans.

19
20 CLEAN: Coordinate planning efforts between the County and utility service providers and encourage the
21 regular exchange of information to aid utility service providers in anticipating and responding to growth
22 and to maintain consistency between utility service plans and County plans.
23

24 Policies (8.2.A.1-6):

- 25
26 1. Provide utility service providers with appropriate plans and mapped information to help establish
27 a common eCounty-wide base map for utilities planning.
- 28
29 2. Obtain Mmaps and facility inventories, with text designating the approximate location of existing
30 facilities and the general location of proposed new facilities, ~~will be obtained~~ from utility service
31 providers and integrated them into the eCounty’s Geographic Information System (GIS).
32
- 33 ~~3. Review the utility facilities inventory annually and provide updates on a biennial basis or as~~
34 ~~necessary.~~
- 35
36 ~~3.~~ 4. Provide utility service providers with ~~annual updates and status reports~~ for the six year capital
37 improvement financing plan to aid in their ability to coordinate necessary system improvements.
38
- 39 ~~4.~~ 5. Cooperate with utility providers in siting facilities for new and alternative technologies to save
40 money and promote reliability of existing utilities by conserving existing energy resources, while
41 promoting a feasible conversion to energy-saving technologies.
42
- 43 ~~5.~~ 6. Cooperate with utility service providers in future comprehensive planning efforts, ~~and in to~~
44 ~~evaluating~~ ing actual patterns and rates of growth and ~~comparing such patterns and rates~~ them to
45 demand forecasts.
46

47 ~~8.2.B Project Coordination~~

1
2 **Goal 2. Goal:** ~~To a Allow~~ for the timely and cost-effective provision of utility services to eCounty
3 residents by enabling inter-agency joint project planning; and ~~to~~ ensure the availability and use of utility
4 corridors within public rights-of-way for the placement of utility service facilities.

5
6 Policies (8.2.B.1-4):
7

- 8 1. Facilitate inter-agency coordination and planning for joint trenching, installation, upgrade, repair,
9 maintenance, and construction of new utility facilities between the Public Works Department, the
10 various utility service providers, and other agencies.
- 11 2. Provide timely notification of proposed projects in public rights-of-way to utility service providers
12 and coordinate the placement of both above- and underground utility facilities, which are
13 necessary to provide adequate service, including transformers, switch vaults, telephone
14 pedestals, utility equipment cabinets, and other necessary utility equipment or structures.
- 15 3. Allow for utility services in ~~New~~ dedications for public rights-of-way ~~should allow for utility~~
16 ~~services.~~
- 17 4. ~~Utility providers should be consulted~~ Encourage consultation between permit applicants and
18 utility providers during the permitting process for installation of utility systems. [Moved from Goal
19 4]

20
21
22
23
24 ~~8.2.C Location and Siting~~
25

26 **Goal 3. ~~XX XXX~~**

27 ~~Goal: To Allow for the presence, continuing operation, maintenance, and expansion of the full range of~~
28 ~~utility services available as reflected in the facilities inventory.; to Accommodate future changes in~~
29 ~~conditions and technologies which may impact the character and operation of utility facilities. ; to~~
30 ~~recognize that the geographic character of San Juan County necessitates providing access and the ability~~
31 ~~to cross shorelines and waterways to utilities; and to recognize that utility facilities must occupy and~~
32 ~~traverse a broad range of areas and land use designations.~~

33
34 Policies (8.2.C.1):
35

- 36 1. ~~Recognize that the geographic character of San Juan County necessitates providing access and the~~
37 ~~ability to cross shorelines and waterways to utilities; and to and that recognize that utility facilities~~
38 ~~must occupy and traverse a broad range of areas and land use designations. [Moved to~~
39 ~~Environment/Rural Character goal]~~
- 40 2. ~~Locate and site utility facilities to minimize negative impacts to the rural character and natural~~
41 ~~environment of the county. New transmission facilities, substations and submarine transmission~~
42 ~~cable terminal facilities should be located and sited to minimize adverse impacts to the county's~~
43 ~~shorelines and rural character. [Moved to Environment/Rural Character goal]~~
- 44 3. ~~New utility facilities should conform to the policies of the Land Use Element.~~
45
46
47

1 ~~8.2.D Permitting~~

2
3 ~~**Goal 3. Goal:** To foster predictability and timeliness in processing permit applications for utilities new~~
4 ~~utility facilities or utility service work; and to allow for necessary development, maintenance, repair,~~
5 ~~improvement, and expansion of utility facilities in a timely and efficient manner.~~

6
7 Policies (8.2.D.1-3):

- 8
9 1. ~~Priority should be given to maintenance and repair work required to restore utility service under~~
10 ~~emergency circumstances.~~
11 ~~Provide provisions for emergency response for delayed permitting of activities necessary to~~
12 ~~prevent an imminent threat to public health, safety, or the environment; or to public or private~~
13 ~~property.~~
14
15 2. ~~Identify utility installation, relocation and maintenance activities which are expected to have~~
16 ~~insignificant environmental impacts and will establish exemptions from permit requirements for~~
17 ~~those types of activities.~~

18
19 ~~Continue to allow utility exemptions from critical area requirements for the installation and~~
20 ~~construction of utility lines and equipment, provided the conditions of exemption are met and~~
21 ~~documented.~~

22
23 ~~8.2.E New Development~~

24
25 ~~**Goal 4. Goal:** To minimize adverse impacts of providing utility services to new development on the rural~~
26 ~~character of San Juan County ; to allow for the provision of the full range of utility services to county~~
27 ~~residents; and to provide for new utility facilities which are compatible with or can be mitigated to~~
28 ~~minimize adverse impacts to adjacent land uses. Protect rural character while also providing for the~~
29 ~~location and extension of necessary utility facilities.~~

30
31 Policies (8.2.E.1-3):

- 32
33 1. ~~Require new utility installations distribution lines to serve for new development should to be~~
34 ~~installed underground, except that services for single-family residential construction on an~~
35 ~~existing parcel may connect with existing overhead utility facilities.~~
36
37 2. ~~Require new development should to be designed so that utility easements are accessible and~~
38 ~~have sufficient capacity for installation of the full range of required utility services.~~
39
40 3. ~~Utility providers should be consulted during the permitting process for installation of utility~~
41 ~~systems. [Moved to Goal 2]~~

42
43 ~~Require landscaping to buffer adjacent uses for new utility installations excluding aboveground~~
44 ~~utility facility development and distribution or transmission corridors when located outside a~~
45 ~~public right-of-way.~~

- 1 4. ~~New utility installations should provide vegetative screening or buffers for existing adjacent~~
2 ~~development. Locate and site utility facilities to minimize negative impacts to the rural character~~
3 ~~and natural environment of the county. [Moved from old goal 3]~~
- 4
- 5 5. ~~New development approved adjacent to existing utility facilities should provide vegetative~~
6 ~~screening or buffers. New utility generation facilities, transmission facilities, substations and~~
7 ~~submarine transmission cable terminal facilities should be located and sited to minimize adverse~~
8 ~~impacts to the County's shorelines and rural character. [Moved from old goal 3]~~

10 ~~8.2.F Environmental Protection~~

11 ~~**Goal 5. Goal:** To Protect and preserve natural habitats and environments while also providing for the~~
12 ~~location and extension of necessary utility facilities.~~

13 Policies (8.2.F.1-4):

- 14
- 15
- 16
- 17 1. ~~View Environmental protection and a quality environment are viewed as one product of, and not~~
18 ~~a constraint on, good utility service, and are important components of operation in the public~~
19 ~~interest. Regulations for environmental protection should recognize both the significance and~~
20 ~~permanence of potential environmental damage and the cost to mitigate or avoid potential~~
21 ~~damage for proposed utility projects.~~
- 22
- 23 2. ~~Locate Nnew utility facilities should be located away from, or constructed them in a manner~~
24 ~~compatible with, critical areas, Rresource Lands, and Sshorelines. Recognize that physical and~~
25 ~~service constraints may not allow relocation away from or full compatibility with such areas and~~
26 ~~resources.~~
- 27
- 28 3. ~~3-Condition the approval of new utility facilities so as to avoid or mitigate any significant adverse~~
29 ~~impacts, and to develop appropriate compensating measures where mitigation is not feasible.~~
- 30
- 31 3.4 ~~Ensure that utility service providers are responsible for costs such as those associated with damage~~
32 ~~caused to the environment and public rights-of-way so that utilities providers will seek to~~
33 ~~minimize those costs in their planning, decision-making, and project execution.~~
- 34
- 35 4. ~~5-Recognize that the geographic character of San Juan the County necessitates requires providing~~
36 ~~access to and the ability to cross shorelines and waterways to connect utilities; and to and that~~
37 ~~recognize that utility facilities must occupy and traverse a broad range of areas and land use~~
38 ~~designations. [Moved from old goal 3]~~
- 39

40 **8.5.B Utility-Specific Goals and Policies**

41 **ELECTRICITY**

42 ~~8.3.A5.B Electricity~~

43

44

45 **Goal 6. Minimize the environmental impacts of electricity production and use while promoting energy**
46 **independence.**

1 ~~Goal: Encourage the exploration of innovative and alternative technologies regarding energy~~
2 ~~conservation.~~

3
4 Policies (8.2.G-1):

- 5
6 1. Encourage utility service providers to explore innovative and alternative methods of producing
7 energy.
8
9 2. ~~Support the transition toward energy independence from the mainland by.~~ [Moved to goal 7,
10 policy 7]
11
12 Working with the San Juan County Conservation District and OPALCO to promote community
13 solar projects and provide technical assistance and incentives to increase individual home solar
14 installations.
15
16 3. Encourage utility providers, Washington State Department of Transportation (WSDOT), and the
17 public to reduce greenhouse gas emissions.
18
19 4. Adopt regulations that allow facilities that support the distribution of electricity for cleaner
20 transportation including electric vehicles and electric ferries.
21
22 5. Encourage the provision of electric vehicle chargers at key destinations throughout the County.
23
24 6. Increase energy efficiency of buildings and systems on the islands by:
25
26 ■ Providing educational materials and supporting education on energy efficiency in buildings,
27 beyond State energy efficiency requirements; and
28 ■ ~~Updating and building new County buildings beyond State energy efficiency requirements and~~
29 ~~generating some electricity with solar arrays when feasible alternatives are available.~~
30 Installing solar panels on new and updated County buildings when feasible.

31
32 **Goal 7. Goal:** ~~To Assist Collaborate with~~ the Orcas Power and Light Company Co-Operative (OPALCO) in
33 achieving its goals for local energy resiliency. ~~as stated in the Cooperative's Bylaws and Articles of~~
34 ~~Incorporation: "to make electric energy available to its members at the lowest cost consistent with sound~~
35 ~~economy, good management, and the public interest."~~

36
37 Policies (8.3.A.1-6):

- 38
39 1. Assist OPALCO when necessary to respond to new, unforeseen conditions and technologies that
40 may affect utility operations and facilities.
41
42 2. Coordinate planning to allow for the appropriate location and siting of all necessary existing and
43 future facilities including overhead, underground, and submarine transmission and distribution
44 systems, substations, cable terminals, standby and generation, and any other necessary
45 equipment or structures. ~~Existing facilities are shown in Figure 1, below.~~
46
47 3. ~~Consider Identify~~ electric power facilities ~~to be~~ as essential public facilities.
48

4. Locate and site ~~New upland power transmission facilities, substations and submarine transmission cable terminal facilities should be located and sited~~ to minimize adverse impacts to the rural character, shorelines and natural environment of the County.
5. Allow ~~the testing of pilot programs to evaluate new alternative renewable energy sources which are consistent with the goals and policies of this Plan and that which~~ comply with all attendant regulations.
6. ~~Develop a process for locating sites deemed appropriate for the location of alternative power generation facilities.~~
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. [Moved from Goal 6, policy 2]

TELECOMMUNICATIONS

8.3.B Telecommunications

Goal 8. Goal: ~~To 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 (8.3.B.1):

1. ~~Identify telecommunications facilities which are developed and operated expressly to carry out emergency services should be considered as essential public facilities.~~
2. ~~In keeping with the County's goal to promote the public service, safety advantages and economic opportunities of widespread availability of state-of-the-art telecommunications technology, potentially suitable personal wireless facility locations identified on the Official County Map, per SICC 16.80.040, as (1) preferred, (2) potentially suitable and (3) conditionally suitable locations, should be reviewed and updated every five years.~~

Coordinate with telecommunications service providers, Emergency Services, Public Works, and the County's Fire Districts to upgrade the County's emergency radio communications.

PROPANE

Goal 9: Recognize propane as a heating source used in the County.

Policies

- 1 1. Identify appropriate land use designations for the siting of bulk fuel storage.
- 2
- 3 2. Support the use of historic barge landings that have served as landing sites for transporting bulk
- 4 fuels.
- 5
- 6 3. Work with the Ports, the Town of Friday Harbor, WSDOT and propane distributors to develop safe
- 7 transportation and circulation routes for the transport of propane.

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COMPREHENSIVE PLAN

Appendix 8

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**UTILITIES INVENTORY
AND EXISTING CONDITIONS**

August 4, 2017

April 3, 2020

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APPENDIX 8

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UTILITIES INVENTORY
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8.1 INTRODUCTION

The Utilities Inventory and Existing Conditions is an appendix to the San Juan County (SJC) 2020 *Comprehensive Plan (Plan)* Utilities Element. This document provides an inventory of utility services in San Juan County, including electricity, telecommunications, internet and cable, and communication sites and facilities. In San Juan County, private service providers supply utilities to customers. This inventory includes the providers, general locations and capacities of existing utilities where applicable. Planning for utilities aids SJC in ensuring adequate services are provided to different areas of the County, particularly as the County population increases.

8.2 ELECTRICITY

San Juan County relies on electricity generated primarily in the Pacific Northwest and transmitted to the San Juan Islands by the Bonneville Power Administration (BPA) and Puget Power. The BPA was created by Congress in 1937 to act as an agent to market power from Bonneville Dam. BPA has been designated to market power from the 29 additional federal dams located within the Northwest. The BPA does not build or own dams or power plants, but does operate the nation's largest network of long-distance high-voltage transmission lines. The BPA electricity is sold to the Orcas Power and Light Company (OPALCO) at BPA's point of delivery on Lopez Island. OPALCO is the sole electric service provider in San Juan County.

OPALCO is a member-owned, private, non-profit Rural Utility Services (RUS) Cooperative that provides local electric service to its members in San Juan County. OPALCO was formed in 1937 and currently maintains offices in Eastsound, Friday Harbor, and on Lopez Island with headquarters in Eastsound. OPALCO is an electric distribution utility distributing power via submarine cables to members on twenty islands. OPALCO prioritizes energy delivery that is safe, reliable, affordable, clean, and sustainable.

8.2.1 Existing Conditions

According to OPALCO, existing electric utility facilities in San Juan County have adequate capacity to serve existing loads. OPALCO maintains a comprehensive Integrated Resource Plan to expand capacity as load growth occurs. Table 8.1.1 below, lists the location and capacities, in million volt-amps (MVA) of each substation in OPALCO's transmission network.

Table 8.2.1 Capacity of OPALCO Electric Facilities (2019).

Location	Base Capacity (MVA)	Max Capacity (MVA)
Shaw	5	5
Orcas	12	12
Eastsound	12	20
Olga	7.5	7.5
Lopez	12	16
Blakely	2.5	2.5
Decatur	2.5	2.5
Roche Harbor	12	22.4
Friday Harbor	12	22.4
Gravel Pit	12	20

Source: OPALCO 2019

1
2

Map 1. OPALCO Electrical Facilities (2019).

OPALCO Islands Served



3
4

1 Table 8.2.2 below, lists the number of service accounts by island for 2019.

2
3

Table 8.2.2 2019 OPALCO Accounts.

Island	Number of Services
Armitage	1
Bell	1
Big Double	3
Blakely	166
Brown	48
Canoe	6
Center	142
Charles	2
Crane	53
Decatur	279
Fawn	1
Henry	97
Little Double	1
Lopez	2,486
Obstruction	36
Orcas	4,736
Pearl	40
Reef Point	1
San Juan	6,528
Shaw	275
Spieden	11
Total	14,913

Source: OPALCO 2019

4
5

8.2.2 Capacity Needs

6
7

8 An analysis of capacity development necessary to meet future demand is contained in OPALCO's long-range
9 plan. OPALCO also develops load forecasts and construction projects in their 4-year Construction Work Plan
10 (CWP) in addition to its long-range planning program. OPALCO is currently implementing its ~~2017-2020~~2021-
11 2024 CWP which is reviewed and updated annually as necessary. These capital-planning programs are
12 referenced here for future comprehensive planning purposes.

13

14 Detailed analyses have been and will be conducted by OPALCO based on planned land use. Planned
15 construction of electric utility facilities serving local load areas is based on existing and projected load rather
16 than time (years). Utilities determine the need for expanded or new electric utility regional transmission
17 network facilities on the basis of established planning standards that define required system performance
18 under specified conditions including load and generation levels, equipment outages, weather, and equipment
19 ratings. As the electric load within San Juan County grows due to an increase in customers and demand,
20 OPALCO will need to add new electrical facilities to increase the capacity of its distribution system. OPALCO
21 estimates an average annual increase of 0.5 percent for residential accounts and 2.0 percent for commercial
22 accounts. Since 2007, OPALCO has increased its consumer accounts by approximately 10 percent or an
23 increase of over 1,400 customers.

1 **8.2.3 Community Solar**

2
3 OPALCO operates a 500 KW solar array located on 3.6 acres at the Decatur Substation. This is OPALCO’s first
4 Community Solar Project—a program where members offset a portion of their energy use and electric bill via
5 credits by buying shares of a solar array OPALCO operates. Decatur Community Solar began operating in July
6 2018, and is expected to produce approximately 570,000 kWh/year. A second community solar project is
7 being developed on San Juan island, for commissioning in 2023. More community solar projects may be a part
8 of OPALCO’s effort to become more energy independent from mainland energy sources.
9

10 San Juan Islands Conservation District and OPALCO promote solar energy projects in the county in partnership
11 with the Bonneville Environmental Foundation and local solar installers. The Community Solar for Our Schools
12 program provided solar array installations to generate power for public schools on Orcas, San Juan, Lopez and
13 Shaw islands.

14
15 **8.2.4 Electric Vehicles and Charging Stations**

16
17 Electric Vehicles (EVs) in San Juan County have been growing at an average of 35% per year. There are 615
18 EVs at the end of 2021. Washington state transportation accounts for over 45% of state greenhouse gas
19 emissions (GHGs), the largest single source of GHGs. The Washinton State 2021 Energy Strategy identifies EVs
20 as one of the most important ways to decarbonize state greenhouse gas emissions. San Juan County has two
21 EVs and two EV charging stations. One EV is on San Juan Island where the County had a charging station in the
22 parking garage beneath the Legislative Building. There is also an EV on Orcas where there is a charging station
23 at the Orcas Ferry Landing. The County is considering purchasing another EV and installing another charging
24 station, to be located on Lopez Island. County EV charging stations are not for public use. There are currently
25 six EVs providing Island Rides to people that don’t have transportation. This constitutes the first electric public
26 transportation in the islands. In the coming decades, it is expected that autonomous electric vehicles will
27 become an important solution for providing public transportation. These autonomous electric vehicles will
28 require access to charging stations able to support automated docking.

29
30 Washington state is developing a new fleet of quiet, clean electric ferries, for service in San Juan County. These
31 eFerries will require rapid charging each time they dock at a county ferry terminal. OPALCO is working with
32 WA DOT to ensure adequate power will be available for recharging the eFerries during a typical 15 minute
33 docking.

34
35 According to the San Juan Islands Conservation District (SJICD), San Juan County has the highest number of
36 public EV chargers per capita in Washington State. There are EV charging stations available to the public on
37 San Juan, Orcas, and Lopez islands, shown in table 8.2.3 below. The SJICD provides some funding for
38 businesses and organizations to install public EV chargers.

39
40 **Table 8.2.3 Public Electric Vehicle Charging Stations**

Location Name	Address	Number of Stations
SAN JUAN ISLAND		
<u>Port of Friday Harbor</u>	<u>200 298 Front St N</u>	<u>1</u>
<u>Key Bank</u>	<u>95 2nd St</u>	<u>3</u>
<u>Earthbox Motel and Spa</u>	<u>410 Spring St.</u>	<u>2</u>

<u>Friday Harbor Grand Bed and Breakfast</u>	<u>345 Blair Ave</u>	<u>1</u>
<u>Avalon Business Park</u>	<u>322 Daniel Ln</u>	<u>1</u>
<u>Sweet Earth Farm Store</u>	<u>5658 West Side Rd</u>	<u>1</u>
<u>Snug Harbor Resort</u>	<u>1997 17 Mitchell Bay Rd</u>	<u>1</u>
ORCAS ISLAND		
<u>Orcas Island Ferry Terminal</u>	<u>156 Orcas Rd</u>	<u>1</u>
<u>Odd Fellows Hall</u>	<u>112 Haven Rd</u>	<u>1</u>
<u>Orcas Island Market</u>	<u>469 Market St</u>	<u>2</u>
<u>Rosario Resort</u>	<u>410 Ocean Mist Way</u>	<u>2</u>
<u>Doe Bay Resort</u>	<u>107 Doe Bay Rd</u>	<u>1</u>
LOPEZ ISLAND		
<u>Lopez Community Land Trust</u>	<u>25 Tuatara Rd</u>	<u>1</u>
<u>Lopez Village Market</u>	<u>162 Weeks Rd</u>	<u>3</u>
<u>Ark Veterinary Clinic</u>	<u>262 Weeks Rd</u>	<u>1</u>
<u>Lopez Island Library</u>	<u>2225 Fisherman Bay Rd</u>	<u>1</u>
<u>Southend General Store and Restaurant</u>	<u>3024 Mud Bay Rd</u>	<u>1</u>

8.3 PROPANE AND NATURAL GAS

Propane is an important energy source in San Juan County. Natural gas is not available in the County, contributing to the reliance on propane. Propane in San Juan County is provided by private suppliers, including Inter-Island Propane and San Juan Propane. Inter-Island Propane is located in Friday Harbor and on Lopez Island. They currently provide barge service to Orcas, Shaw, and to the outer islands by request. Inter-Island propane has been permitted to build and operate a new facility in Eastsound. San Juan Propane is located in Friday Harbor, Eastsound, and Island Center on Lopez Island. San Juan County's involvement with propane extends only to land use issues. Safe delivery of propane from ports is a priority.

8.4 TELECOMMUNICATIONS (DATA & VOICE)

8.4.1 Data & Telephone - Fiber Optic

The availability of fiber optic based services has grown extensively throughout the county in the past decade. This is meeting the growing needs of the electric grid, emergency communications, residential and business broadband and cell phone service. In Mid-2015, deployment of Fiber to the Home and Premise (FTTH & FTTP) began throughout the county. As of October 2019, approximately 50 percent of the County (7,500 addresses)

1 is located within a serviceable distance (500 feet or less) of existing fiber optic facilities. Of those addresses,
2 1,800 are utilizing fiber optic service. As demand for higher bandwidth and additional improvements are made
3 to public infrastructure, the availability of fiber optic services will continue to grow. The FTTP system enables
4 homes and businesses to scale their needs up to 1Gbps (1,000 Mbps) upon initial installation with the ability
5 to go to 10Gbps (10,000 Mbps) as required. Fiber is considered a future-proof technology that allows for
6 massive increases in available bandwidth for generations to come. The average monthly new connection rate
7 is 30-40 locations. The fiber is spanning 500 plus miles connecting all major islands and to the mainland with
8 multiple upstream connections in Bellingham and Seattle.

9 10 **8.4.2 Telephone – Voice over Internet Protocol (VoIP)**

11
12 With the increase use of data communication services, Voice over Internet Protocol (VoIP) has become the
13 predominate method for non-wireless based voice communications around the nation, particularly for
14 businesses. VoIP services are dependent on reliable, low-latency internet connectivity. Unlike Plain Old
15 Telephone Service (POTS) lines, the Washington Utilities and Transportation Commission (WUTC) does not
16 regulate VoIP.

17
18 There are various resellers of VoIP services for residents and businesses in San Jun County. Anyone with a
19 reliable internet connection can purchase voice services from a variety of national providers. Each of these
20 providers deliver a wide variety of services and advanced features based upon the consumer requirements.

21 22 **8.4.3 Wireless – Fixed Wireless Long Term Evolution (LTE)**

23
24 In addition to deploying Fiber To The Home (FTTH) around the County, Fixed Wireless LTE has been deployed.
25 LTE has been deployed to service areas where fiber is unavailable currently. LTE is a standard for wireless
26 broadband communication for mobile devices and data terminals. It increases the capacity and speed using
27 a different radio interface together with core network improvements. Fixed Wireless LTE utilizes cellular
28 technology enabling high-speed data and voice connections in the range of 25Mbps to 150 Mbps. As of
29 October 2019, 3,000 locations are served with fixed wireless broadband service. This service is recognized
30 nationally as one of the top 10 fastest wireless services available to U.S. residents and the highest available
31 offering in Washington State. Service is provided to 18 non ferry-served islands, some without utility power
32 service. With increased capacity being added regularly, this service is available to over 4,500 locations in San
33 Juan County.

34 35 **8.4.4 Wireless – Cellular**

36
37 Personal wireless communication facilities are not classified as public utilities or essential services, but are a
38 commercial service. Nationally, the Federal Communications Commission (FCC) regulates the airwaves and
39 the personal wireless communications industry and is responsible for issuing construction permits for
40 transmission facilities and licenses to operate wireless systems. All major national cell phone providers have
41 a presence in San Juan County from T-Mobile, Verizon, AT&T and Sprint to smaller service providers. Overall
42 capacity of the network with multiple new frequency bands opening enables for higher throughput and data
43 rates. It is expected providers will expand their capacity and coverage area over time to accommodate their
44 respective customer base.

45
46 Local governments regulate the development of the wireless communications network by specifying where
47 facilities can locate, applying buffering and setback requirements, etc. Federal case law from regulating
48 facilities covered by the Federal Aviation Administration (FAA) has preempted local governments. The FAA
49 reviews the location and height of proposed support structures to prevent interference with operations of
50 airports and flight paths. The FAA regulates proposed towers that exceed 200 feet and smaller structures

1 located within 20,000 feet of a major airport and 10,000 feet of a general aviation airport. The FAA does not
2 have the authority to deny an FCC construction permit, but it can cite a proposed support structure as a hazard
3 to navigation. (See the discussion on Airport facilities in Element II-D Transportation.) In 2014, San Juan
4 County adopted a joint use wireless ordinance enabling the broader development of wireless infrastructure
5 for essential public services.
6

7 **8.4.5 Telephone - Plain Old Telephone Service (POTS)**

8

9 CenturyLink, based in Monroe, Louisiana, is the primary provider of POTS (Plain Old Telephone Service), to
10 approximately 10,000 residential and business customers in the county. The number of locations decreases
11 as consumers discontinue landline service or port their number over to VoIP providers, such as Rock Island
12 Communications, a subsidiary of OPALCO. In addition, CenturyLink also provides digital subscriber line (DSL)
13 service; as well as private dedicated services (i.e. Ethernet) which helps meet the needs of telecommunication
14 customers throughout the county.
15

16 CenturyLink provides service to the county via a fiber optic cable network that connects all the major islands
17 to the mainland. It provides these essential services to meet the needs of telecommuters and those who run
18 businesses from their homes. Service is currently provided to Blakely, Brown, Center, Crane, Decatur, Henry,
19 Lopez, Obstruction, Orcas, Pearl, San Juan and Shaw Islands.
20

21 Geographic isolation and comparatively small resident populations have historically inhibited the extension
22 of telephone service to some islands within the county, such as Stuart Island.
23

24 **8.5 INTERNET & CABLE SERVICES**

25

26 Fast, reliable Internet connection is increasingly important to economic development, health and safety, and
27 daily life in San Juan County. Broadband Internet connection allows residents opportunities to work remotely
28 and connect with others globally. Medical facilities and emergency services rely heavily on broadband Internet
29 in order to provide modern, up-to-date care. The Economic Development Element of this Comprehensive
30 Plan states the goal of “support[ing] development of reliable high-speed (100 Mbps or higher, or the current
31 standard for urban regions of the U.S., whichever is higher) broadband infrastructure that enables the creation
32 of jobs and improved educational opportunities for islanders, and increased competitiveness for the county.”
33 Internet utility infrastructure comes in several forms, including LTE fixed wireless, fiber, and cable.
34

35 Rock Island Communications provides broadband Internet via LTE fixed wireless and fiber in San Juan County.
36 Rock Island is a subsidiary of OPALCO, as of 2015. Fiber connectivity is growing rapidly, with LTE providing
37 service in areas awaiting fiber deployment. Cable Television and Internet services have continued to see a
38 significant decrease throughout the county with CenturyLink, Zito Media and PogoZone covering parts of
39 Friday Harbor and Orcas Island. This decline has been driven by the consumer move to online streaming
40 services such as Netflix, Hulu and Amazon as broadband services via fiber and wireless increase, in addition
41 to increased competition from satellite providers.
42

43 **8.6 COMMUNICATION SITES AND FACILITIES**

44

45 Antennae and towers atop Mt. Constitution on Orcas Island are used to provide broadcast communications
46 and electronic controls. As telecommunications technology and demands continue to change, service
47 providers must retain the ability to expand existing and build new antennae and towers for operational
48 purposes.
49

1 Mt. Constitution Sites, Inc. owns 160 acres of land within Moran State Park and leases communication towers
2 to approximately 40 users. In all they have five towers with three primary sites ranging from 500', 400', to a
3 235' tower, located in the northeast corner of this property.
4
5 East of the 160-acres of private property mentioned above, the U.S. Coast Guard leases a one-acre site from
6 the Washington State Parks and Recreation Commission (WSPRC) and operates a 100-foot tower with
7 microwave dishes to monitor small vessels. KVOS leases a one-acre site from the WSPRC at the 2,409 summit
8 of Mt. Constitution and operates a transmitter facility and a 150-foot tower. Washington State Department
9 of Transportation (WSDOT) leases a one-acre site from WSPRC southwest of the KVOS site and operates two
10 70-foot towers. The U.S. Forest Service also leases one acre from WSPRC and operates two 70-foot towers.
11 The University of Washington also operates a seismographic telemetry station at this site. This site may, at
12 some point, no longer be sufficient for future forms of, or demand for, personal wireless services. The county
13 adopted Ordinance 8-1997, which established a subarea plan and requirements for future personal wireless
14 communication service facilities through Chapter 16.80 of the SJCC.

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