

SAN JUAN COUNTY
DEPARTMENT OF COMMUNITY DEVELOPMENT

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MEMO

DATE: January 3, 2020

TO: San Juan County Council
San Juan County Planning Commission

CC: Mike Thomas, County Manager

FROM: Sophia Cassam, Planner I *sc*
Linda Kuller, AICP, Planning Manager *LK*

RE: Second Draft Utilities Inventory
SJC Comprehensive Plan Appendix 8

BRIEFINGS: County Council: TBD
Planning Commission January 17, 2020

ATTACHMENTS: Second Draft Appendix 8: Inventory of Utilities

Purpose: Transmittal of a third draft inventory of utilities for review and comment. The January 3rd draft is posted on the Comprehensive Plan Update webpage under the Utilities tab at: <https://www.sanjuanco.com/1306/Comprehensive-Plan-Elements>.

The second draft inventory was released for comment in October 2019. This updated draft addresses comments received from the public, County Council and Planning Commission. Changes from the second draft are shown in red strikeout/underline.

Summary of Major Changes to the Inventory:

- Incorporated new information provided by OPALCO, shown in tables and text;
- Updated information on telecommunications services; and
- Added information on private propane utilities

OPALCO provided additional information that will be included in the *SJC Comprehensive Plan (Plan)* Section B, Element 8, Utilities. OPALCO addresses the future of energy in San Juan County, taking into account climate change, new technology, renewable energy and population growth.

How to Comment: Public comments are requested on the January 3, 2020, draft by **January 28, 2020**. Please submit your comments to compplancomments@sanjuanco.com subject line: RE: Utilities inventory. Please provide your contact information for the record and identify the page and line number pertaining to the comment. If possible, provide specific alternative language. Comments may also be submitted to the SJC Department of Community Development at PO Box 947 935 Rhone Street, Friday Harbor, 98250, c/o Sophia Cassam, Planner I.

Background: Completing this inventory is the first step in preparing the Section B, Element 8, Utilities, a mandatory component of a comprehensive plan prepared in accordance with the WA Growth

Management Act (GMA). RCW 36.70A.070(4) requires: "A utilities element consisting of the general location, proposed location, and capacity of all existing and proposed utilities, including, but not limited to, electrical lines, telecommunication lines, and natural gas lines." WAC 365-196-420 outlines next steps that will be completed in the update of the Utilities Element in Section B.8 of the SJC Comprehensive Plan:

WAC 365-196-420 Utilities element.

(1) Requirements. The utilities element shall contain at least the following features: The general location, proposed location, and capacity of all existing and proposed utilities, including, but not limited to, electrical lines, telecommunication lines, and natural gas lines.

(2) Recommendations for meeting requirements. Counties and cities should consider the following:

(a) The general location and capacity of existing and proposed utility facilities should be integrated with the land use element. Proposed utilities are those awaiting approval when the comprehensive plan is adopted.

(b) In consultation with serving utilities, counties and cities should prepare an analysis of the capacity needs for various utilities over the planning period, to serve the growth anticipated at the locations and densities proposed within the jurisdiction's planning area. The capacity needs analysis should include consideration of comprehensive utility plans, least-cost plans, load forecasts, and other planning efforts.

(c) The utility element should identify the general location of utility lines and facilities required to furnish anticipated capacity needs for the planning period. This should be developed in consultation with serving utilities as a part of the process of identifying lands useful for public purposes.

(d) Counties and cities should evaluate whether any utilities should be identified and classified as essential public facilities, subject in cases of siting difficulty to the separate siting process established under the comprehensive plan for such facilities.

(e) Counties and cities should evaluate whether any utility facilities within their planning area are subject to county-wide planning policies for siting public facilities of a county-wide or statewide nature.

(f) Counties and cities should include local criteria for siting utilities over the planning period, including:

(i) Consideration of whether a siting proposal is consistent with the locations and densities for growth as designated in the land use element.

(ii) Consideration of any public service obligations of the utility involved.

(iii) Evaluation of whether the siting decision will adversely affect the ability of the utility to provide service throughout its service area.

(iv) Balancing of local design considerations against articulated needs for system-wide uniformity.

(g) Counties and cities should adopt policies that call for:

(i) Joint use of transportation rights of way and utility corridors, where possible.

(ii) Timely and effective notification of interested utilities about road construction, and of maintenance and upgrades of existing roads to facilitate coordination of public and private utility trenching activities.

(iii) Consideration of utility permit applications simultaneously with the project permit application for the project proposal requesting service and, when possible, approval of utility permits when the project permit application for the project to be served is approved.

(iv) Cooperation and collaboration between the county or city and the utility provider to develop vegetation management policies and plans for utility corridors.

(A) Coordination and cooperation between the county or city and the utility provider to educate the public on avoiding preventable utility conflicts through choosing proper vegetation (i.e., "Right Tree, Right Place").

(B) Coordination and cooperation between the county or city and the utility provider to reduce potential critical areas conflicts through the consideration of alternate utility routes, expedited vegetation management permitting, coordinated vegetation management activities, and/or long-term vegetation management plans.

(h) Adjacent counties and cities should coordinate to ensure the consistency of each jurisdiction's utilities element and regional utility plan, and to develop a coordinated process for siting regional utility facilities in a timely manner.

COMPREHENSIVE PLAN

Appendix 8

THIRD DRAFT
UTILITIES INVENTORY
AND EXISTING CONDITIONS

~~August 4, 2017~~

January 3, 2020

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APPENDIX 8

DRAFT UTILITIES INVENTORY AND EXISTING CONDITIONS

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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 four main elements of service: price, reliability, environment/carbon footprint, and resilience: 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 system Integrated Resource Plan to expand capacity as load growth occurs. Table 8.1.1 below, lists the location and capacities, in megawatts (MW) million volt-amps (MVA) of each substation in OPALCO's transmission network.

Table 8.2.1 Capacity of OPALCO Electric Facilities (2017).

Substation	Location (Parcel Number)	Capacity (MW)
No. 1 Decatur	152232002	1
No. 2 Lopez	252634004	12
No. 3 Shaw	262844002	3.75
No. 4 Orcas	261022010	12
No. 5 Friday Harbor	351391410	12
No. 7 Roche Harbor	462441001	12
No. 8 Olga	160943003	7.5
No. 9 Thatcher	150414002	1
No. 10 Eastsound	271421004	12
No. 11 FH Grover St.	351391323	12

—Source: OPALCO 2017

1

Table 8.2.1 Capacity of OPALCO Electric Facilities (2019).

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

Source: OPALCO 2019

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3

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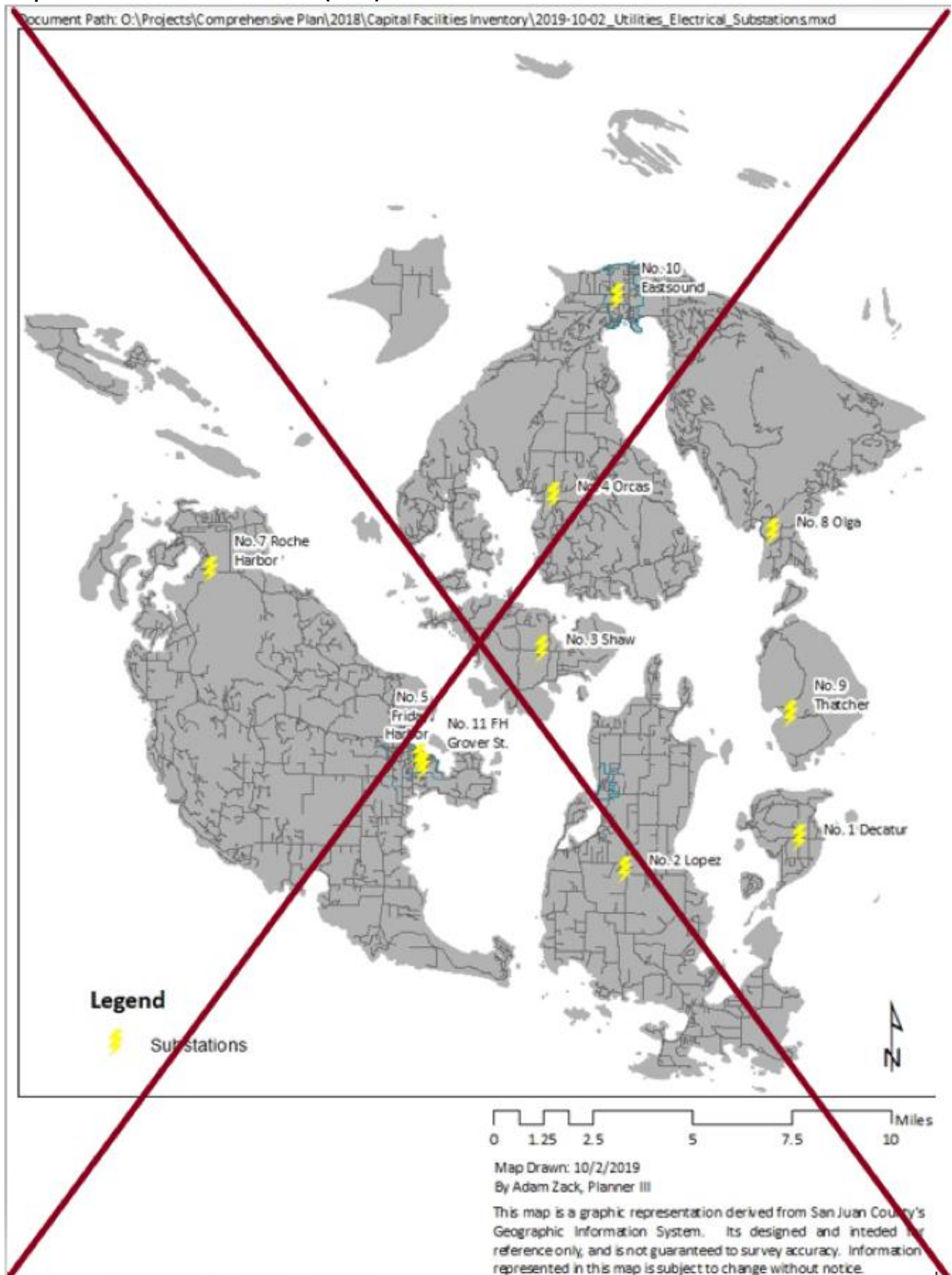
1 Map 1. OPALCO Electrical Facilities (2019).

OPALCO Islands Served



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1 Map 1. OPALCO Electrical Facilities (2019).



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3

Table 8.2.2 below, lists the number of service accounts by island for 2017⁷⁹. Additional information on OPALCO's service territory can be found in Figure 1 of Section B – Element 8 – Utilities.

Table 8.2.2 2017 OPALCO Accounts.

Island	# of Accounts
San Juan (includes the Town of Friday Harbor)	6,069
Orcas	4,404
Lopez	2,386
Shaw	260
Decatur	254
Blakely	161
Center	131
Henry	88
Crane	50
Brown	47
Pearl	39
Obstruction	36
Spieden	11
Canoe	6
Big Double	3
Charles	2
Reef Point	1
Armitage	1
Bell	1
Fawn	1
Total	13,951

Source: OPALCO 2017

Table 8.2.2 2019 OPALCO Accounts.

Island	Number of Services
<u>Armitage</u>	<u>1</u>
<u>Bell</u>	<u>1</u>
<u>Big Double</u>	<u>3</u>
<u>Blakely</u>	<u>166</u>
<u>Brown</u>	<u>48</u>
<u>Canoe</u>	<u>6</u>
<u>Center</u>	<u>142</u>
<u>Charles</u>	<u>2</u>
<u>Crane</u>	<u>53</u>
<u>Decatur</u>	<u>279</u>
<u>Fawn</u>	<u>1</u>
<u>Henry</u>	<u>97</u>
<u>Little Double</u>	<u>1</u>
<u>Lopez</u>	<u>2,486</u>
<u>Obstruction</u>	<u>36</u>
<u>Orcas</u>	<u>4,736</u>
<u>Pearl</u>	<u>40</u>
<u>Reef Point</u>	<u>1</u>
<u>San Juan</u>	<u>6,528</u>

<u>Shaw</u>	<u>275</u>
<u>Spieden</u>	<u>11</u>
<u>Total</u>	<u>14,913</u>

Source: OPALCO 2019

8.2.2 Capacity Needs

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

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

8.2.3 Community Solar

OPALCO operates a 500 KW solar array located on 3.6 acres at the Decatur Substation (~~TPN-152232002000~~). This is OPALCO's first Community Solar Project—a program where members offset a portion of their energy use and electric bill via credits by buying shares of a solar array OPALCO operates. Decatur Community Solar began operating in July 2018, and is expected to produce approximately 570,000 kWh/year.

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. 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, ~~consumer 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) is located within a serviceable distance (500 feet or less) of existing fiber optic facilities. Of those

addresses, 1,800 are utilizing fiber optic service. As demand for higher bandwidth and additional improvements are made to public infrastructure, the availability of fiber optic services will continue to grow. Once complete, 60 percent to 70 percent of residential and business locations will have access to a direct fiber connection by 2025. The FTTP system enables homes and businesses to scale their needs up to 1Gbps (1,000 Mbps) upon initial installation with the ability to go to 10Gbps (10,000 Mbps) as required. ~~Fiber is a future proof technology that allows for unlimited potential in terms of data volume and capacity. As of July 2017, over 1,000 locations around the county are serviced with an~~ Fiber is considered a future-proof technology that allows for massive increases in available bandwidth for generations to come. The average monthly new connection rate is 30-40 locations. The fiber is spanning 500 plus miles connecting all major islands and to the mainland with multiple upstream connections in Bellingham and Seattle.

8.4.2 Telephone – Voice over Internet Protocol (VoIP)

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

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

8.4.3 Wireless – Fixed Wireless Long Term Evolution (LTE)

In addition to deploying FTTH around the County, Fixed Wireless LTE ~~locations have~~ has been deployed. ~~in areas inaccessible to a fiber connection~~ LTE has been deployed to service areas where fiber is unavailable currently. Fixed Wireless LTE utilizes cellular technology enabling high-speed data and voice connections in the range of 25Mbps to 150 Mbps. ~~As of July 2017, 1,500 locations were serviced with a future plan to serve up to 4000-5000 locations county wide by 2020. Fixed Wireless service does enabling for the first time true broadband in unserved and under-served areas of the county such as Stuart and Waldron Islands. As of October 2019, 3,000 locations are served with fixed wireless broadband service. This service is recognized nationally as one of the top 10 fastest wireless services available to U.S. residents and the highest available offering in Washington State. Service is provided to 18 non ferry-served islands, some without utility power service. With increased capacity being added regularly, this service is available to over 4,500 locations in San Juan County.~~

8.4.4 Wireless – Cellular

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

Local governments regulate the development of the wireless communications network by specifying where facilities can locate, applying buffering and setback requirements, etc. Federal case law from regulating

1 facilities covered by the Federal Aviation Administration (FAA) has preempted local governments. The FAA
2 reviews the location and height of proposed support structures to prevent interference with operations of
3 airports and flight paths. The FAA regulates proposed towers that exceed 200 feet and smaller structures
4 located within 20,000 feet of a major airport and 10,000 feet of a general aviation airport. The FAA does not
5 have the authority to deny an FCC construction permit, but it can cite a proposed support structure as a hazard
6 to navigation. (See the discussion on Airport facilities in Element II-D Transportation.) In 2014, San Juan
7 County adopted a joint use wireless ordinance enabling the broader development of wireless infrastructure
8 for essential public services.
9

10 **8.4.5 Telephone - Plain Old Telephone Service (POTS)**

11
12 CenturyLink, based in Monroe, Louisiana, is the primary provider of POTS (Plain Old Telephone Service), to
13 approximately 10,000 residential and business customers in the county. The number of locations decreases
14 as consumers discontinue landline service or port their number over to VoIP providers, such as Rock Island
15 Communications, a subsidiary of OPALCO. In addition, CenturyLink also provides digital subscriber line (DSL)
16 service; as well as private dedicated services (i.e. Ethernet) which helps meet the needs of telecommunication
17 customers throughout the county.
18

19 CenturyLink provides service to the county via a fiber optic cable network that connects all the major islands
20 to the mainland. It provides these essential services to meet the needs of telecommuters and those who run
21 businesses from their homes. Service is currently provided to Blakely, Brown, Center, Crane, Decatur, Henry,
22 Lopez, Obstruction, Orcas, Pearl, San Juan and Shaw Islands.
23

24 Geographic isolation and comparatively small resident populations have historically inhibited the extension
25 of telephone service to some islands within the county, such as Stuart Island.
26

27 **8.5 INTERNET & CABLE SERVICES**

28
29 Fast, reliable Internet connection is increasingly important to economic development, health and safety, and
30 daily life in San Juan County. Broadband Internet connection allows residents opportunities to work remotely
31 and connect with others globally. Medical facilities and emergency services rely heavily on broadband Internet
32 in order to provide modern, up-to-date care. The Economic Development Element of this Comprehensive
33 Plan states the goal of “support[ing] development of reliable high-speed (100 Mbps or higher, or the current
34 standard for urban regions of the U.S., whichever is higher) broadband infrastructure that enables the creation
35 of jobs and improved educational opportunities for islanders, and increased competitiveness for the county.”
36 Internet utility infrastructure comes in several forms, including LTE fixed wireless, fiber, and cable.
37

38 Rock Island Communications provides broadband Internet via LTE fixed wireless and fiber in San Juan County.
39 Rock Island is a subsidiary of OPALCO, as of 2015. Fiber connectivity is ~~currently limited, but increasing as~~
40 ~~demand grows~~ growing rapidly, with LTE providing service in areas awaiting fiber deployment. Cable
41 Television and Internet services have continued to see a significant decrease throughout the county with
42 CenturyLink, Zito Media and ~~Mt. Baker Cable~~ **POGO Zone** covering parts of Friday Harbor and Orcas Island
43 **respectively**. This decline has been driven by the consumer move to online streaming services such as Netflix,
44 Hulu and Amazon as broadband services via fiber and wireless increase, in addition to increased competition
45 from satellite providers.
46
47

8.6 COMMUNICATION SITES AND FACILITIES

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

Mt. Constitution Sites, Inc. owns 160 acres of land within Moran State Park and leases communication towers to approximately 40 users. In all they have five towers with three primary sites ranging from 500', 400', to a 235' tower, located in the northeast corner of this property.

East of the 160-acres of private property mentioned above, the U.S. Coast Guard leases a one-acre site from the Washington State Parks and Recreation Commission (WSPRC) and operates a 100-foot tower with microwave dishes to monitor small vessels. KVOs leases a one-acre site from the WSPRC at the 2,409 summit of Mt. Constitution and operates a transmitter facility and a 150-foot tower. Washington State Department of Transportation (WSDOT) leases a one-acre site from WSPRC southwest of the KVOs site and operates two 70-foot towers. The U.S. Forest Service also leases one acre from WSPRC and operates two 70-foot towers. The University of Washington also operates a seismographic telemetry station at this site. This site may, at some point, no longer be sufficient for future forms of, or demand for, personal wireless services. The county adopted Ordinance 8-1997, which established a subarea plan and requirements for future personal wireless communication service facilities through Chapter 16.80 of the SJCC.