



SAN JUAN COUNTY
DEPARTMENT OF COMMUNITY DEVELOPMENT

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MEMO

TO: San Juan County Planning Commission
CC: Erika Shook, AICP, Director, DCD
Mike Thomas, County Manager
San Juan County departments and service providers
FROM: Linda Kuller, AICP, Deputy Director, DCD
Donna DePamphilis, Temporary Planner II
SUBJECT: 2036 Comprehensive Plan Update
Briefing: Preliminary draft Utilities inventory for review
DATE: August 4, 2017
MEETING DATE: August 18, 2017
ATTACHMENTS: Preliminary draft Utilities inventory dated August 4, 2017

BRIEFING PURPOSE:

Overview of the Utilities Element of the Comprehensive Plan and release of the **preliminary draft** of the Utilities inventory for public review and comment. This is the **first step** in amending the Utilities Element and Appendix 8 of the Comprehensive Plan.

THANKS:

To all of the staff and service providers that have provided information for this preliminary draft.

BACKGROUND:

The Washington State Growth Management Act (GMA) requires state and local governments to manage Washington's growth by identifying and protecting critical areas and natural resource lands, designating urban growth areas, preparing comprehensive plans and implementing them through capital investments and development regulations.

The following Commerce checklist provides an overview of all of the tasks necessary to update the Utilities element of the Comprehensive Plan.



Department of Commerce

Innovation is in our nature.

Expanded Comprehensive Plan Checklist

A Technical Assistance Tool From Growth Management Services – update: July 2014

Instructions:

This checklist is intended to help jurisdictions update their comprehensive plan, as required by [RCW 36.70A.130\(4 & 5\)](#). We encourage but do not require jurisdictions to complete the checklist and return it to Growth Management Services (GMS). This checklist is for local governments fully planning under the Growth Management Act (GMA), not for those planning for resource lands and critical areas only. For general information on update requirements, refer to [Keeping your Comprehensive Plan and Development Regulations Current: A Guide to the Periodic Update Process under the Growth Management Act](#) and [WAC 365-196-610](#).

Bold items are a GMA requirement. Other items may be requirements of other state or federal laws, best practices, or ideas to consider. **Highlighted items are links to Internet sites.** Dates are included for recent additions or amendments to the GMA. If you have questions, call GMS at (360) 725-3066.

Checklist Topics:

- [Land Use](#)
- [Housing](#)
- [Capital Facilities](#)
- [Utilities](#)
- [Rural](#)
- [Transportation](#)
- [Economic Development](#)
- [Park and Recreation](#)
- [Shoreline](#)
- [Essential Public Facilities](#)
- [Optional Elements](#)
- [Consistency](#)
- [Public Participation](#)

<p>a. 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. RCW 36.70A.070(4). WAC 365-195-420 recommends goals and policies relating coordination in construction, permits, utility corridor use and management. Counties and cities should evaluate whether any utilities should be identified as essential public facilities in case of siting difficulties.</p>	<p><input type="checkbox"/> General location and capacity of existing and proposed facilities</p>
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ACTION REQUESTED: Review and comment on the preliminary draft and help provide notice to your district that that the draft is posted on the project website under utilities at:

<http://www.sanjuanco.com/1306/Comprehensive-Plan-Elements>

COMPREHENSIVE PLAN

Appendix 8

**DRAFT
UTILITIES INVENTORY
AND EXISTING CONDITIONS**

August 4, 2017

APPENDIX 8

**DRAFT
UTILITIES INVENTORY
AND EXISTING CONDITIONS**

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1 **8.1 ELECTRICITY**

2
3 San Juan County relies on electricity generated primarily in the Pacific Northwest and
4 transmitted to the San Juan Islands by the Bonneville Power Administration (BPA) and Puget
5 Power. The BPA was created by Congress in 1937 to act as an agent to market power from
6 Bonneville Dam. BPA has been designated to market power from the 29 additional federal
7 dams located within the Northwest. The BPA does not build or own dams or power plants,
8 but does operate the nation's largest network of long-distance high-voltage transmission
9 lines. The BPA electricity is sold to the Orcas Power and Light Company (OPALCO) at BPA's
10 point of delivery on Lopez Island. OPALCO is the sole electric service provider in San Juan
11 County.

12
13 OPALCO is a member-owned, private, non-profit Rural Utility Services (RUS) Cooperative
14 which provides local electric service to its members in San Juan County. OPALCO was
15 formed in 1937 and currently maintains offices in Eastsound, Friday Harbor, and on Lopez
16 Island with headquarters in Eastsound. OPALCO is an electric distribution utility distributing
17 power via submarine cables to members on twenty islands.

18
19 **8.1.1 Existing Conditions**

20
21 According to OPALCO, existing electric utility facilities in San Juan County have adequate
22 capacity to serve existing loads. OPALCO maintains a comprehensive system plan to expand
23 capacity as load growth occurs. Table 8.1.1 below, lists the location and capacities, in
24 megawatts (MW) of each substation in OPALCO's transmission network.

25
26 **Table 8.1.1 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

27
28
29 Table 8.1.2 below, lists the number of service accounts by island for 2017. Additional
30 information on OPALCO's service territory can be found in Figure 1 of Section B - Element 8
31 – Utilities.

Table 8.1.2 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

8.1.2 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.

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4 **8.2 TELECOMMUNICATIONS (Data & Voice)**

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6 **8.2.2 Data & Telephone - Fiber Optic**
7

8 The availability of fiber optic based services has grown extensively throughout the county in
9 the past decade. This is meeting the growing needs of the electric grid, emergency
10 communications, consumer business broadband and cell phone service. In Mid-2015,
11 deployment of Fiber to the Home and Premise (FTTH & FTTP) began throughout the county.
12 Once complete, 60 percent to 70 percent of residential and business locations will have
13 access to a direct fiber connection by 2025. FTTH enables homes and businesses to scale
14 their needs up to 1Gbps (1,000 Mbps) upon initial installation with the ability to go to
15 10Gbps (10,000 Mbps) as required. Fiber is a future proof technology that allows for
16 unlimited potential in terms of data volume and capacity. As of July 2017, over 1,000
17 locations around the county are serviced with an average monthly new connection rate of
18 30-40 locations. The fiber is spanning 500 plus miles connecting all major islands and to the
19 mainland with multiple upstream connections in Bellingham and Seattle.
20

21 **8.2.2 Telephone – Voice over Internet Protocol (VoIP)**
22

23 With the increase use of data communication services, Voice over Internet Protocol (VoIP)
24 has become the predominate method for non-wireless based voice communications around
25 the nation, particularly for businesses. VoIP services are dependent upon reliable internet
26 connectivity to function, as most services offerings are cloud based. Unlike POTS lines, the
27 Washington Utilities and Transportation Commission (WUTC) does not regulate VoIP.
28

29 There are various resellers of VoIP services for residents and businesses in San Jun County.
30 Anyone with a reliable internet connection can purchase voice services from a variety of
31 national providers. Each of these providers deliver a wide variety of services and advanced
32 features based upon the consumer requirements.
33

34 **8.2.3 Wireless – Fixed Wireless Long Term Evolution (LTE)**
35

36 In addition to deploying FTTH around the county, Fixed Wireless LTE locations have been
37 deployed in areas inaccessible to a fiber connection. Fixed Wireless LTE utilizes cellular
38 technology enabling high-speed data and voice connections in the range of 25Mbps to 150
39 Mbps. As of July 2017, 1,500 locations were serviced with a future plan to serve up to 4000-
40 5000 locations county wide by 2020. Fixed Wireless service does enabling for the first-time
41 true broadband in unserved and under-served areas of the county such as Stuart and
42 Waldron Islands.
43

44 **8.2.4 Wireless – Cellular**
45

46 Personal wireless communication facilities are not classified as public utilities or essential
47 services, but are a commercial service. Nationally, the Federal Communications Commission
48 (FCC) regulates the airwaves and the personal wireless communications industry and is

1 responsible for issuing construction permits for transmission facilities and licenses to
2 operate wireless systems. All major national cell phone providers have a presence in San
3 Juan County from T-Mobile, Verizon, AT&T and Sprint to smaller service providers. Overall
4 capacity of the network with multiple new frequency bands opening enables for higher
5 throughput and data rates. It is expected providers will expand their capacity and coverage
6 area over time to accommodate their respective customer base.
7

8 Local governments regulate the development of the wireless communications network by
9 specifying where facilities can locate, applying buffering and setback requirements, etc.
10 Federal case law from regulating facilities covered by the Federal Aviation Administration
11 (FAA) has preempted local governments. The FAA reviews the location and height of
12 proposed support structures to prevent interference with operations of airports and flight
13 paths. The FAA regulates proposed towers that exceed 200 feet and smaller structures
14 located within 20,000 feet of a major airport and 10,000 feet of a general aviation airport.
15 The FAA does not have the authority to deny an FCC construction permit, but it can cite a
16 proposed support structure as a hazard to navigation. (See the discussion on Airport
17 facilities in Element II-D Transportation.) In 2014, San Juan County adopted a joint use
18 wireless ordinance enabling the broader development of wireless infrastructure for
19 essential public services.
20

21 **8.2.4 Telephone - Plain Old Telephone Service (POTS)**

22
23 CenturyLink, based in Monroe, Louisiana, is the primary provider of POTS (Plain Old
24 Telephone Service), to approximately 10,000 residential and business customers in the
25 county. The number of locations decreases as consumers discontinue landline service or
26 port their number over to VoIP providers. In addition, CenturyLink also provides digital
27 subscriber line (DSL) service; as well as private dedicated services (i.e. Ethernet) which helps
28 meet the needs of telecommunication customers throughout the county.
29

30 CenturyLink provides service to the county via a fiber optic cable network that connects all
31 the major islands to the mainland. It provides these essential services to meet the needs of
32 telecommuters and those who run businesses from their homes. Service is currently
33 provided to Blakely, Brown, Center, Crane, Decatur, Henry, Lopez, Obstruction, Orcas, Pearl,
34 San Juan and Shaw Islands.
35

36 Geographic isolation and comparatively small resident populations have historically
37 inhibited the extension of telephone service to some islands within the county, such as
38 Stuart Island.
39

40 **8.3 CABLE SERVICES**

41
42 Cable Television and Internet services have continued to see a significant decrease
43 throughout the county with CenturyLink, Zito Media and Mt. Baker Cable covering parts of
44 Friday Harbor and Orcas Island respectively. This decline has been driven by the consumer
45 move to online streaming services such as Netflix, Hulu and Amazon as broadband services
46 via fiber and wireless increase, in addition to increased competition from satellite providers.
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8.4 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.