# Coffman Engineers

## Whidbey Island Water Systems Association Sept 2019

**Benjamin Ware, PE**

COFFMAN ENGINEERS

# 15 Office Locations

## 40 years


## 530+ People

# Small Water System Management Program

## What is it?

- Planning document that addresses the managerial, technical, and financial operations of a water system.
- Tool for community water systems to use for short- and long-term planning.
- Resource for technical information specific to the community water system.
- Management device providing accountability and organization for the owner/members.

# Small Water System Management Program (SWSMP)

## Submitted to DOH when

- A water system seeks to be eligible for a Drinking Water State Revolving Fund (DWSRF) loan.
- When a planning document is required, but not a Water System Plan.
- A new Group A non-transient non-community water system is created.
- When required by WSDOH
- A water system seeks existing system "as built" approval under WAC246-290-140

# Small Water System Management Program (SWSMP)

**4 Chapters to the SWSMP**

- Managerial
- Technical – Today's focus
- Financial
- Other Documents

# Chapters 2.6-2.8

Group A Community Systems

- Chapter 2.6 Water Production
- Chapter 2.7 Water Consumption
- Chapter 2.8 Future Water Consumption

Group A TNC Systems

- Sections 3.3 & 3.4

# Chapter 2.6

Water Production

- Groundwater well
- Springs
- Seawater

Whatever your source, it must be metered to record its production. We recommend at a minimum that source meter readings are collected monthly to satisfy the WAC.

Typically, 2 years of records to justify additional ERU's

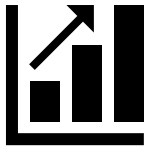
# Chapter 2.6

| Water Production, Consumption, and Distribution System Leakage (DSL) - *Reporting Year _____* | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ***PRODUCTION: Total Water Produced Per Source:*** | | | | | | | | | | | | | |
| | JAN | FEB | MAR | APRIL | MAY | JUNE | JULY | AUG | SEPT | OCT | NOV | DEC | TOTAL |
| Total Volume Pumped-1st Source | | | | | | | | | | | | | 0 |
| Total Volume Pumped-2nd Source | | | | | | | | | | | | | 0 |
| Total Volume Pumped-3rd Source | | | | | | | | | | | | | 0 |
| Total Volume Pumped-Other Sources Combined | | | | | | | | | | | | | 0 |
| Total Volume Purchased | | | | | | | | | | | | | 0 |
| **Total Water Produced and Purchased** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ***AUTHORIZED CONSUMPTION: Metered Water:*** | | | | | | | | | | | | | |
| *Single-family Residential* | | | | | | | | | | | | | 0 |
| *Multi-family Residential* | | | | | | | | | | | | | 0 |
| *Industrial/Commercial/ Institutional* | | | | | | | | | | | | | 0 |
| *Other* | | | | | | | | | | | | | 0 |
| *Other* | | | | | | | | | | | | | 0 |
| ***Exported Water (sold to another system)*** | | | | | | | | | | | | | 0 |
| **Total Metered:** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ***AUTHORIZED CONSUMPTION: Unmetered Water (Estimates):*** | | | | | | | | | | | | | |
| *Utility Flushing/Tank Cleaning* | | | | | | | | | | | | | 0 |
| *Fire Fighting/Training* | | | | | | | | | | | | | 0 |
| *Storm or Sewer Cleaning* | | | | | | | | | | | | | 0 |
| *Unmetered Customers* | | | | | | | | | | | | | 0 |
| *Other* | | | | | | | | | | | | | 0 |
| *Other* | | | | | | | | | | | | | 0 |
| **Total Unmetered** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Total Authorized Consumption** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ***DISTRIBUTION SYSTEM LEAKAGE (DSL):*** | | | | | | | | | | | | | |
| **Total Volume for DSL** | | | | | | | | | | | | | 0 |
| **Percent DSL** | | | | | | | | | | | | | 0.0% |

# Chapter 2.7

Water Consumption

- Residential – single or multi family
- Non-residential, commercial or recreational
- Full or part time
- Metered and unmetered water



Per Municipal Water Law, services must be metered to record their consumption.  We recommend that, at a minimum, service meter readings be collected monthly.

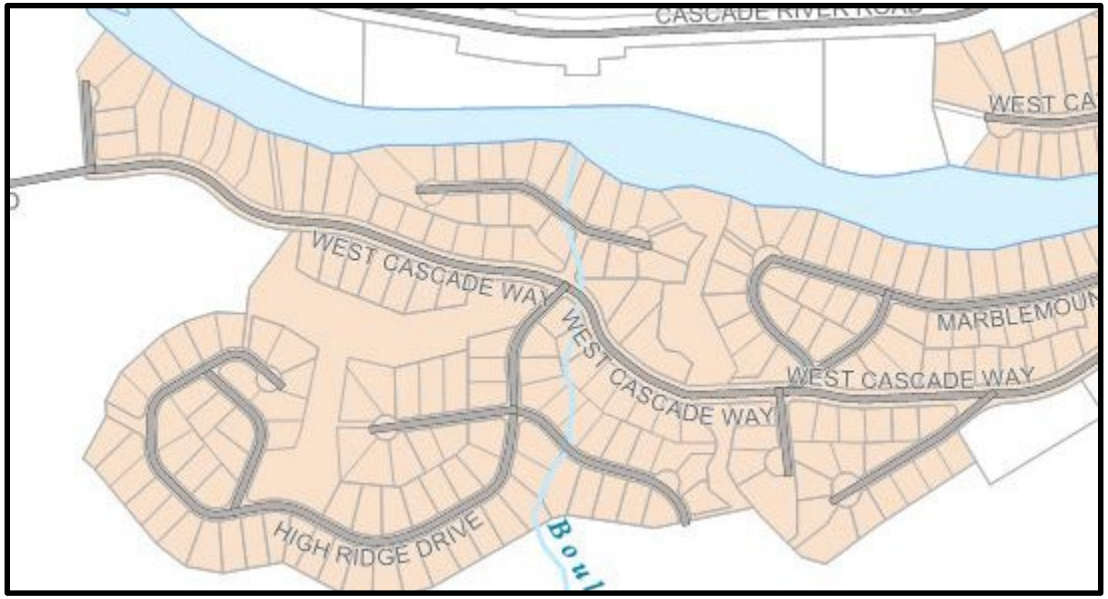
Also, it is important to note the type of the service connection (full or part time, residential or recreational)

Tiered rate structure is typically recommended

# Chapter 2.8

Future Water Consumption

- Commercial vs. residential needs
- Undeveloped lots or areas within your service area.
- Approved number of connections
- Nearby systems that you may want to annex…or they may want to be annexed.




# Chapter 2.8

**Table 2-8**
**Future Water Consumption**

| Line Number | Type of Information | Value |
|---|---|---|
| 1 | Record the number of full-time single-family homes you currently serve. | 49 Homes |
| 2 | Summarize and record the volume of water (in gallons) all full-time single-family homes consumed in the past year.<br><br>If you do not record service meter information and your customers are primarily single-family homes, you can estimate their consumptive use by dividing the total water produced and purchased (See Table 2-6) by the number of connections, and insert that value in Line 3 below. Also, insert "0" in line 7 below. | 2.4 million Gallons per year |
| 3 | Determine the average annual consumption per full-time single family home by dividing the value in Line 2 by the value in Line 1. | 48,980 Gallons per house/per year |

# Chapter 2.8

| | | |
|---|---|---|
| 4 | Determine the average daily demand (ADD) per existing single family home by dividing the value in line 3 by 365. | 134 ADD per single family home |
| 5 | Determine the number of new single-family homes you expect to serve in the future. Count the number of vacant lots in your service area that you expect to serve in the future. Do not count existing homes. Consult with your local land-use planning agency to find out whether the vacant lots can be subdivided if you do not know. | 7 Homes |
| 6 | Calculate the additional single-family residential annual consumption by multiplying the value in line 3 by the value in line 5. | 343,000 Gallons per year |
| 7 | Summarize and record the volume of water (in gallons) consumed by all existing multi-family, commercial, industrial, and municipal customers. | 0 Gallons per year |

# Chapters 2.8

| | | |
|---|---|---|
| 8 | Forecast the additional annual consumption you expect to serve in the future from multi-family, commercial, industrial, and municipal customers. Do not include existing demands. Consult local land use plans for your area to see if these types of future uses are planned if you do not know. | 0 Gallons per year |
| 9 | Summarize the total forecasted additional annual consumption by adding the values in Lines 6 + 8 together. | 343,000 Gallons per year |
| 10 | Calculate the total forecasted annual consumption by adding together existing uses (Line 2 and Line 7), existing DSL (see Table 2-6), and your forecasted additional annual consumption (Line 9): Line 2 + Line 7 + DSL volume taken from Table 2-6 + Line 9 | 2.743 million Gallons or 8.41 acre-ft per year |

# Chapter 2.8

| Line Number | Type of Information | Value |
|---|---|---|
| 11 | Is your existing water right sufficient for the forecasted annual consumption? (Refer to the value in Line 10 and remember: an acre-foot is equal to 325,851 gallons). | ☐ Yes or ☒ No |
| 12 | Calculate the forecasted average daily consumption by dividing the value from Line 10 by 365. | 7515 Gallons per day |
| 13 | Forecast the maximum daily consumption by multiplying the value in Line 12 by two. | 15030 Gallons per day |
| 14 | Convert the maximum daily consumption from Line 13 to a continuous flow rate in gpm: divide the value in Line 13 by 1,440. This is the minimum flow rate (gpm) needed from all your sources to meet your forecasted maximum daily consumptive demand. | 10.4 Gallons per minute |
| 15 | Is your existing water right sufficient for the forecasted maximum daily consumption flow rate calculated in Line 14? (Compare the instantaneous flow allowed in your water right with the value in Line 14). | ☒ Yes or ☐ No |

# Conclusion

Important take a ways

Information you will need even if you delegate this task:

- 2.6 Source Meter Data
- 2.7 Consumer Meter Data
- 2.8 Plans for future growth

Talk to your Engineer, Regional Engineer or Regional Planner if you have questions.

# Questions?

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American Water Works Association
Pacific Northwest Section
Northwest Washington Subsection

COFFMAN ENGINEERS

# Asset Management Training Workshop

**When**
Tuesday, October 15, 2019 from 8:30 AM to 12:00 PM PDT
Add to Calendar

**Where**
Snohomish County PUD
Stanwood Office
9124 - 271st ST NW
Stanwood, WA 98292


## ASSET MANAGEMENT TRAINING WORKSHOP

### For Water Systems

TUESDAY, OCTOBER 15th 2019

8:30 a.m. - 12:00 p.m.

Snohomish PUD - Stanwood

Located at 9124 271st St NW, Stanwood, WA 98292

- DWSRF loan bonus points for attending
- 0.3 CEU's available (pending approval)

Asset Management is a fundamental approach to utility O&M aimed at prolonging the life of important infrastructure components and the sustainability of water system infrastructure.

Please join us for this FREE event. Presentations by Carl Garrison of Coffman Engineers, Dan Bannier and Steve Palmer of RCAC, and Karen Klocke of the Washington State Department of Health.