Whatcom County Group A Water System Technical Support Program Pilot

Department of Health Contract N21873

Deliverable Number 3 Report on Capacity Assessment & Technical Assistance

December 28, 2018

Prepared By: Public Utility District No.1 Of Whatcom County 1705 Trigg Road Ferndale Ferndale, WA 98248

Project Manager: Dave Olson Cornerstone Management, Inc. 6993 Mission Rd. Everson, WA 98247

Executive Summary

The Washington State Office of Drinking Water (ODW) Mission Statement is "to work with others to protect the health of the people of Washington State by ensuring safe and reliable drinking water". In 2016 the ODW partnered with Public Utility District No. 1 of Whatcom County (PUD) to pilot a local outreach and technical assistance program to assess and assist local small Group A water systems, with less than 1,000 connections, in acquiring and maintaining the Technical, Managerial, and Financial (TMF) Capacity needed to ensure safe, reliable, sustainable supplies of drinking water.

The pilot program offered a new way of supporting local small water systems by building on local relationships and utilizing local expertise to improve water system TMF Capacity. The PUD has partnered with the ODW on multiple drinking water issues and is recognized for its commitment to the community as a trusted non-regulatory resource to support local water systems. The PUD has the vision and ability to collaborate with others when opportunities arise and is uniquely qualified to engage with and support small water systems.

The Technical Support Program pilot began with an assessment of local water system capacity needs. A wide variety of databases were examined to help identify and summarize the most common TMF Capacity indicators. Input from the drinking water community, including water system governing bodies and operators, was received by means of a survey and direct interaction to gain further insight on capacity technical assistance needs.

While there was no single indicator of capacity, the following three core attributes of capacity provided the best overall sense of a water system's future success in developing and maintaining capacity. Those three core attributes are: an engaged governing body in contrast to a governing body with high turnover or lack of understanding of their role; a certified operator in responsible charge in contrast to an operator without the authority or resources to perform; and adequately functioning infrastructure in contrast to systems built in the 1960's whose governing bodies are unaware and/or unwilling to invest in capital planning and replacement.

Based on the capacity needs assessment, a technical assistance training and community engagement strategy was developed. Training workshops focused on areas of need and subjects of interest identified by local water systems and the PUD in concert with the ODW such as: risk management, water rights, facility mapping, and chlorine residual sampling skills. In addition to providing training on the subject matter, other broader goals were to encourage participation, develop networking opportunities, and build local relationships. One-on-one technical support began by reaching out to those systems identified during the assessment as being in need of varying degrees of technical assistance. The PUD also responded to specific requests for technical assistance from system governing body representatives, system operators, as well as referrals and requests from the Whatcom County Health department and the state ODW.

After announcing availability of the technical support program, the PUD was surprised and temporarily overwhelmed by the volume of requests and need for technical support. This initial demand for assistance is believed to have been from pent-up needs not otherwise addressed through traditional technical support resources and possibly more important because support was available from a trusted, local, non-regulatory entity.

The PUD concluded after assessing system capacity and providing a broad range of technical assistance that small water systems are generally on one of three paths: Sustainable, Transitional, or Declining.

Sustainable: About one third of water systems, typically larger systems, are actively engaged in doing the work needed and have the knowledge, tools, and resources to ensure they can provide safe and reliable drinking water into the future. These systems benefit from ongoing technical support but they are generally larger, self-sufficient, and self-motivated. These systems may be able to help support those with a TMF capacity deficiency.

Transitional: About one third of systems face significant challenges but with some motivation and assistance they will respond in a positive direction. Many of these systems face operational deficiencies such as implementation of disinfection or programmatic deficiencies such as development and implementation of a cross connection control program. Other systems face more systemic challenges like retaining a governing body that is willing to plan for facility replacement and assess water rates necessary to support long term plans. Systems willing to engage in progressive capacity development and maintenance with access to technical support will generally move towards sustainability.

Declining: The remaining systems generally find themselves in decline because they simply don't have the awareness or motivation needed to move in a positive direction. These systems are typically smaller and often unaware or in denial of the need to engage in capacity development and maintenance. Some systems struggle to maintain day to day technical or financial capacity while others are so overwhelmed by larger issues like a shortage of supply or a Nitrate contaminated source that they simply give up or pretend the problem does not exist. Small systems don't have economies of scale to draw upon for governance or financial resources. It is critical to stem the decline of these systems to prevent more serious issues from developing and support them towards a path of sustainability. Without technical support these systems are more likely to fail, ultimately falling to the purveyor of last resort.

Each water system is responsible to develop and maintain the Technical, Managerial, and Financial capacity necessary to ensure it can provide safe and reliable drinking water. Public water systems and their water works operators are the community's first line of defense against contaminants getting into our public water supply and people getting sick.

Many small water systems are working hard to provide safe drinking water but they need the collective support of state and local resources to overcome the capacity challenges they face. Small water systems in isolation without access to adequate local technical support are often incapable of developing and maintaining capacity because they do not have the knowledge, tools, and resources to ensure they can provide safe and reliable drinking water now and into the future.

The key to a successful technical support program is helping systems to understand the reasons for what needs to be done and inspiring them to be self-motivated in taking next steps because they want to, not simply because of a regulation. The technical assistance process began with identifying needs and then understanding the psychology behind what is holding a system back from addressing the needs. Is there a willingness to move forward but not the knowledge, skills, and resources to do so? Or does the community served by the water system simply take for granted the value of water until there is a crisis and no water is available or they are told to boil their water due to a positive E.coli sample result.

Most small systems are governed, managed and often operated by volunteers who may not have the awareness, vision, or motivation to set goals, develop strategies, and execute a plan for long term sustainability. In fact many systems simply function on an as needed basis only sufficient to keep water flowing day to day. The local technical support program helps systems better understand the why behind what needs to be done and encourages next steps by inspiring systems to do the right thing, not just because it is required.

The two year pilot program has clearly demonstrated the value of willing and capable PUD's advocating on behalf of their local drinking water community. Local agencies and community leaders are best positioned to understand local water supply needs and challenges, and to identify opportunities for improving and supporting water system capacity in their community.

During the pilot the PUD gained a better understanding of local drinking water supply needs and the importance of system capacity development and maintenance. The PUD engaged with over 85% of small Group A community systems and interacted over 600 times with Group A systems in a wide variety of capacity areas. The PUD worked with state and local agencies to support systems facing water quality and quantity emergencies and facilitated opportunities for restructuring and consolidation.

Building and maintaining relationships at the local level requires a long-term investment as such investment and engagement are key to understanding and acting on local opportunities when they occur. The PUD is committed to the ongoing process of building trust and confidence in the drinking water community and fostering an environment of ongoing capacity development to a degree that the ODW and local health find it difficult to develop from a regulatory compliance and emergency response basis.

It is in the best interest of the drinking water community for the ODW to continue its local partnership with PUD's, Counties, and Satellite Management Agencies to ensure that local communities have the support and resources needed to develop and maintain TMF Capacity.

PUD No. 1 of Whatcom County welcomes the opportunity to continue its "partnership" with the ODW in this vital drinking water program that supports local small water purveyors and their mission to provide safe, reliable, sustainable drinking water to the local community.

Table of Contents

Executive Summary	i
Table of Contents	1
Glossary of Acronyms and Terms	
Introduction	4
Background	5
Federal, State, and Local Drinking Water Framework	5
Water Systems Governance and Operator Background	6
Whatcom County Water Systems Overview	7
PUD No. 1 of Whatcom County Background and Drinking Water History	
Technical, Managerial, and Financial Capacity Background and History	
Methodology	
Task 1: Assess system capacity need and develop technical assistance strategy	
Task 1.1: Compile a single database of available capacity information	
Task 1.2: Conduct outreach to obtain input on needed technical assistance	
Task 1.3: Develop assistance training and community engagement strategy	
Task 1.4: Develop performance measures to meet specific goals	
Task 2: Offer water system capacity technical assistance training and support	
Promotion	
Website	
Workshops	
One-On-One Support	
PUD No. 1 Public Meeting Presentations	
Water Supply Symposium Presentation	
WRIA I Planning Unit	
Coordinated Water System Plan	
Summary & Conclusions	
Next Steps	
References	
Appendices	

Index of Tables	
------------------------	--

	Table 1	Number and Type of Public Water Systems
	Table 2	Group A Community System Water Right Capacity Analysis
	Table 3	Group A Community Systems County Wide Water Rights Summary
	Table 4	Initial Capacity Indicators
	Table 5	Sanitary Survey Findings: General/Administrative/Planning
	Table 6	Sanitary Survey Findings: Operational/Mechanical
	Table 7	Areas of Technical Managerial and Financial Canacity
	Table 8	Number of Systems Engaged With By Type of System
	Table 9	Interactions in Technical Capacity
	Table 10	Interactions in Managerial & Einancial Canacity and Workshops
Index of Figur		interactions in Manageria & Financial Capacity and Workshops
maex of Figur	ES Eigura 1	Viginity Man
	Figure 1	Crown A Watar Systems Samilas Areas
	Figure 2	Group A water Systems Service Areas
	Figure 3	Government and Non-government Systems
	Figure 4	Water Rights Capacity Overview
	Figure 5	Water Systems Impacted by Nitrate & Arsenic Above The MCL
	Figure 6	Group A Water System Operating Permit Status
	Figure 7	Group A System Connection Availability
	Figure 8	Bridging the Gap from Current to Desired Reality
	Figure 9	Technical Assistance Memorandum (Sample)
	Figure 10	Technical Assistance Memorandum: Supplemental Activity Log (Sample)
	Figure 11	Enterprise Terrace Map (Sample)
	Figure 12	Overview of Mapping Assistance
	Figure 13	Drinking Water History, Progression of Water System, and Challenges
Index of Appen	ndices	
	Appendix 1	ODW Whatcom County Planning Landscape
	Appendix 2	ODW Capacity Assessment Survey: Whatcom
	Appendix 3	ODW Sanitary Survey Capacity Summary
	Appendix 4	Technical Support Program Survey Questions and Responses
	Appendix 5	System Chlorination Requirements – CT6
	Appendix 6	Missing Chlorination Reports
	Appendix 7	Operating Permit Status
	Appendix 8	Sample Exceedances: Nitrate, Lead & Copper, Coliform
	Appendix 9	Survey of Small Whatcom County Systems (Sample)
	Appendix 10	Water Rights' Understanding and Management (PPT)
	Appendix 11a	Water System Risk Management: Liability Insurance (PPT)
	Appendix 11b	Water System Risk Management: Hydrants (PPT)
	Appendix 179	Manning: Enterprise Terrace System Man
	Appendix 12a	Mapping: Enciptise Terrace System Map
	Appendix 120	Pilot Program Introduction Presentation (PDT)
	Appendix 13	Pilot Program Descerab and Detabase Findings Dresentation (DDT)
	Appendix 14	Pilot Program Project Conclusion Procentation (DPT)
	Appendix 15	r not r tografii r toject Conclusion r tesentation (PP1)
	Appendix 10	water Suppry Symposium Presentation (PPT)
	Appendix 1/a	Technical Assistance Memorandum (Template)
	Appendix 1/b	Technical Assistance Memorandum: Supplemental Activity Log (Template)
	Appendix 18	recnnical Assistance Memorandum Summary
	Appendix 19	PUD Technical Support Pilot Program Press Release

Glossary of Acronyms and Terms

Af	Acre feet (1 acre-foot equals 43,560 cubic feet or 325,852 gallons)
Afy	Acre-feet per year
CWPP	County-wide Planning Policies
CWSP	Coordinated Water System Plan (Prepared pursuant to Chapter 70.116 Revised Code of Washington (RCW))
CWSSA	Critical Water Supply Service Area (Chapter 70.116 RCW and Chapter 246-293 WAC)
DOH	Washington State Department of Health
Ecology	Washington State Department of Ecology
EPA	United States Environmental Protection Agency
MCL	Maximum contaminant Level
NTNC/TNC	Non-transient Non-community/transient Non-community
PPT	Power Point Presentation print out
PUD	Public Utility District
Qa	Annual Water Rights
Qi	Instantaneous Water Rights
RCW	Revised Code of Washington
SDWA	Safe Drinking Water Act
SMA	Satellite Management Agency
SWSMP	Small Water System Management Plan
TMF	Technical, Managerial, Financial Capacity
TSP	Technical Support Program
WAC	Washington Administrative Code
WCHD	Whatcom County Health Department
WRIA	Water Resource Inventory Area
WSP	Water System Plan
WUCC	Water Utility Coordinating Committee
WUE	Water Use Efficiency

Introduction

The Washington State Department of Health, Office of Drinking Water (ODW) contracted with Public Utility District No. 1 of Whatcom County (PUD) to pilot a local outreach and technical assistance program to improve the technical, managerial, and financial (TMF) capacity of small water systems in Whatcom County.



Figure 1: Regional Vicinity Map

The PUD is a special purpose district governed under Revised Code of Washington Title 54. The PUD has a history of delivering industrial, irrigation and drinking water in Whatcom County. Over the past 10 years, the PUD has partnered with the ODW on multiple local drinking water issues. Support for local drinking water systems included evaluating and facilitating solutions for regional groundwater nitrate contamination, helping water systems with technical, managerial, or financial capacity issues, and restructuring or consolidation of troubled systems with adjacent water purveyors of greater capacity.

The primary goal of the pilot was to assess the capacity needs of Whatcom County small Group A water systems serving less than 1,000 connections and assist them with increasing their Technical, Managerial, and Financial (TMF) capacity to successfully run as sustainable utilities. The pilot program provided some group training opportunities for system governing bodies and operators but the vast majority of technical support was provided through one-on-one interaction with individual water systems for their specific areas of TMF capacity need. The pilot also informed the drinking water community and local leaders about the importance of building and maintaining water systems TMF capacity as part of the broader community water supply planning efforts.

Acknowledgement

This study could not have been accomplished without the assistance and proactive efforts of the Washington State Department of Health, the Northwest Regional Office of Drinking Water staff and PUD No. 1 of Whatcom County Commissioners and staff.

Background

Federal, State, and Local Drinking Water Framework

There is nothing more important to sustaining life than safe drinking water. We take for granted, even to the point of complacency, the significance of water that is a life sustaining liquid food delivered to our homes and work through an unseen network of pumps and pipes, on demand, every minute of the day.

The State of Washington board of health first took steps towards safe drinking water regulations about 1902. Congress initiated its drinking water oversight when it passed the Federal Safe Drinking Water Act (SDWA) in 1974 to protect public health by regulating the nation's public drinking water supply. Under the SDWA, the Environmental Protection Agency (EPA) sets standards for drinking water quality and oversees the state, localities, and water suppliers who must implement those standards. EPA granted the Washington State Department of Health (WSDOH) Office of Drinking Water (ODW) the authority to implement the SDWA and enforce federal drinking water rules in Washington State. State rules that govern Group A public water systems are found in the Washington Administrative Code (WAC) 246-290 and 246-292. The rules cover many areas of water system operations and management, and are consistent with the SDWA.

The Public Water System Coordination Act (Chapter 70.116 RCW), enacted by the Washington State legislature in 1977, provides regulatory authority and direction to local governments to employ an intentional approach that considers water resources, water quality, and water quantity when developing goals, policies, and regulations that apply to land use. A goal of the Public Water System Coordination Act is to provide for an adequate supply of potable water for consumptive use while recognizing that water supplies are finite and variable within the County and must be used efficiently. A second goal is to ensure that an adequate supply of water is readily available to serve projected growth and land uses. The link between growth management and potable water resource management for Whatcom County exists when there is adequate drinking water supply for anticipated land use population demand among other things.

The Water System Coordination Act (WAC 246-293), developed under the authority of the Public Water System Coordination Act (RCW 70.116), implements a program for public water system coordination. In areas where public water system are suspected of having problems related to inadequate water quality, unreliable service, or lack of coordinated planning, a preliminary assessment is undertaken under county legislative authorities and the ODW with assistance from affected state and local agencies. Based upon review of the preliminary assessment, most of Whatcom County was declared to be within a CWSSA boundary.

Upon declaration of a CWSSA a Water Utility Coordinating Committee (WUCC) was appointed with one representative from each the county legislative authority, the county planning agency, the county health agency, and each water purveyor with over fifty services. Other interested parties were invited to participate in a non-voting capacity. The WUCC recommend external critical water supply service area boundaries and is responsible for the orderly and efficient development of the public water system planning process culminating in the required Coordinated Water System Plan (CWSP).

The Whatcom County CWSP consists of a compilation of individual water system plans approved pursuant to WAC 248-54-580, together with supplementary provisions addressing water purveyor concerns relating to the entire critical water supply service area. The coordinated water system plan provides for maximum integration and coordination of public water system facilities consistent with the protection and enhancement of the public health and well-being. The CWSP recognizes established water system service areas and provides for resolution of service area conflicts. The CWSP also establishes

minimum performance standards for fire protection. The CWSP is not to be inconsistent with adopted county and city land use plans, ordinances, and/or growth policies addressing development within the critical water supply service area for at least five years beyond the date of establishment of external boundaries.

The CWSP provides direction and guidance for local agencies and water systems consistent with other local plans. When land use and water supply planning are coordinated, water utilities may develop long-range financial, technical, and operational plans with regard to capacity in accordance with planned land use. This coordination, when documented in a CWSP including individual WSPs provides the community with some degree of certainty as to whether or not water service may be available in the course of a development process and provides greater transparency and efficiencies to all involved parties.

Each water purveyor is subject to these Federal and State statutes and regulations, local ordinances administered through local Planning and Health Departments, as well as each water systems own unique set of governance including but not limited to: Bylaws, Resolutions, Policies, Practices and Procedures. Each purveyor must also have an appropriate water system plan that addresses the primary elements of owning and operating a water system. Together these provide the framework for each Group A water system to operate and ensure a safe, reliable, sustainable supply of drinking water for the community it serves.

Local Water System Governance and Operator Background

Community drinking water systems in unincorporated rural areas are commonly governed by a volunteer board of directors or commissioners elected from the community it serves. The vast majority of governing body members are unfamiliar with the essential aspects of operating a drinking water system and are often ill-equipped to oversee the development and maintenance of a systems technical, managerial, and financial capacity. In many cases a governing body does not understand, let alone acknowledge the importance of planning, saving, and investing in facility maintenance and replacement of aging infrastructure beyond the minimum effort needed to sustain the system short term.

Capacity challenges are further compounded when a governing body's level of capacity awareness and philosophical commitment to sustainability is represented by a "patch it now, fix it later" or "if it's not broken don't fix it" mindset. This type of governance environment leaves even the most qualified and dedicated system operators with little or no support to develop and maintain operational capacity.

Most water systems in Whatcom County are governed by an elected governing body and have a certified operator as required by the ODW. However, there is often a functional gap between the governing body and the certified water operator. Sustainable systems recognize the importance of the management role and have someone assigned to it. Systems that face challenges or that are declining often have this role unfilled. The need to bridge this gap varies based on the size and complexity of the water system.

Larger or more complex water systems often have a professional water system manger with the responsibility and authority to develop and execute water system plans and operations to ensure safe reliable water. Most small water systems cannot justify a professional water system manager and therefore commonly rely on the volunteer or part time water system operator to fill this gap of being in responsible charge of all aspects of management and day to day operations.

Many small system operators are the system owner or a community member that was grandfathered into the role in order to satisfy the ODW certified water operator requirement. Most grandfather operators have little if any drinking water training or experience beyond exposure to their own system.

Small Group A water system governing bodies and operators face significant challenges ahead including: aging infrastructure, retiring legacy operators, retaining engaged governing body members, shortage of qualified contract operators, increasing regulation, and scarce funding.

Whatcom County Water Systems Overview

There are approximately 415 public water systems in Whatcom County serving over 170,000 people excluding those properties served by private wells. These systems are divided into a series of sub-groups shown in Table 1 below. The Office of Drinking Water has oversight over Group A water systems that serve over 98% of the population served by water systems. Group B systems fall under the jurisdiction of the county health department and represent less than 2% of the population served by water systems.

Number and Type of Public Water Systems	Number of Systems	Estimated Connections	Estimated Population	Percent of Total	
Group A	-				
Community Water Systems	102	64,794	168,283	98.666%	
Non-Transient Non-Community Water Systems (NTNC) *school, church, business, fire hall, etc.	15	123	5	0.003%	
Transient Non-Community Water System (TNC) **corner store, gas station, restaurant, etc.	64	3,673	137	0.080%	
Group B (<15 residential connections and < 25 people/day)	234	1,016	2,134	1.251%	
Total	415	69,606	170,559	100%	

Table 1: Number and Type of Public Water Systems

Each of the 181 Group A water system shown in Figure 2 is owned, operated, and governed independently with approximately 95% of these systems serving less than 1,000 connections representing about 45% of the population. Those system serving greater than 1,000 connections generally have healthy technical, managerial, and financial capacity because they have been actively planning. The larger percentage of the population in Whatcom County is served by those system over 1,000 connections and are provided with safe, reliable water. The big challenge in Whatcom County is that we have a large number of smaller systems, especially TNC and NTNC systems that are struggling.

Many of the 102 small Group A community systems were established by bootstrapping farm communities, cluster housing developers, or mobile home park owners, each focused on their initial water supply needs during the 60's, 70's, and 80's. A large number of these small systems are still operating with original facilities beyond their initial 50 year life expectancy. Few, if any of these small Group A community water systems envisioned the need to plan for increasing demand with limited supply or replacement of aging infrastructure, let alone compliance with increasing and complex federal, state, and local drinking water standards and regulations. The remaining 79 non-community systems typically supply a single connection that serve use such as a corner market, small business, school, or church.



Figure 2: Group A Water System Service Areas

Group A Systems: Government & Non-Government:

Of the 102 Community water systems, approximately 20 are Municipal Corporations, often referred to as government systems that include cities and special purpose water districts, with the remaining systems commonly referred to as non-government systems such as private and non-profit water systems. Figure 3 shows government systems in dark blue and non-government in light blue.

Government water systems are governed by elected officials directly accountable to all the voters including both customers and non-customers. As elected representatives of the public, they are governed by the Open Public Meetings Act and required to make decisions in open public meetings. Government systems are subject to the Public Records Act and all other laws applicable to local government including the code of ethics for municipal officers, public bidding laws, and laws applicable to public financing and auditor oversight.

Government water systems are typically larger and actively planning, often with professional staff to manage the operation of the system under the direction of the governing body. Accountability and financial audits are routinely conducted and published by the State Auditor's Office. Budgets and financial statements are common practice and tied to comprehensive water system plans that take into account short term and long term capital needs and related funding strategies.

In contrast, non-government water systems are governed by the owner of the systems or a board of directors elected from among the customers only. The governing body is only as accountable as their corporate documents make them and to the degree followed. Non-government water suppliers are not subject to the same laws applicable to local government such as the Open Public Meetings Act, Public Records Act, or financial oversite by the State Auditor's Office.

All Group A water purveyors are however subject to the same Federal and State water statutes and regulations, and local ordinances administered through local Planning and Health Departments.



Figure 3: Government and Non-government Water Systems

Group A Systems: Water Right Capacity Analysis

Domestic, industrial, irrigation, stock watering, ground water permit exempt wells, and surface water rights all serve a unique and important role in Whatcom County. Water rights for fish, industrial use, and irrigation are extremely important for fishing, industry, and agriculture as economic engines in the region. The limited availability of new water rights and uncertainty around existing water rights is a substantial problem in dealing with growth issues, water quality and quantity, and planning.

When evaluating public water systems and their ability to provide water to their customers now and in the future, there are several factors that must be considered. A key component of that determination is an analysis of each system's water rights, including existing intertie agreements, compared to their existing and future water demands.

A water rights capacity analysis was conducted during the 2016 Whatcom County coordinated Water System Plan (CWSP) to compare each water system's existing water rights, and/or existing intertie agreements, against current and anticipated future demands. Both the existing and build-out water demands for each system were compared against their respective annual water rights (Qa) in an effort to determine whether systems are projected to meet their future requirements, have surplus water, or have insufficient future water rights. No comparison was made between peak demand and instantaneous water rights (Qi). The results of this analysis are summarized in Table 2. Based on the results of the water rights analysis (which take into account existing intertie agreements), a water rights status for each Group A community public water system was assigned and is represented in Figure 4 according to the existing and projected population and the historic and project water demand.

1 2		
Water Right Status	Number of	Description
	Systems	
Currently Exceeding Water Right Limits	6	Water Rights are insufficient to meet current
		demand
Projected to Exceed Water Right Limits at	16	Water rights may be insufficient to meet
Full Buildout		projected demand at full buildout.
Enough Water Rights to Meet Current and	15	Water rights are satisfactory to meet current
Future Projected Water Demand		and future projected water demand at full
		buildout.
More Water Rights than Current and	53	Water rights exceed the current and future
Future Projected Water Demand		projected water demand (i.e., surplus water
,		may be available).
No Data on System Water Use	12	No data available.
-		
In this table, the water right status includes not only	water rights hele	d by the system, but also intertie agreements currently in
place for receipt of water from other systems. Any w	ater included as p	art of an intertie agreement was subtracted from the water

Table 2: Group A Community Public Water Systems Water Right Capacity Analysis Summary

available to the system providing the water to meet its own projected demand.

The six Group A community public water systems that appear to be currently exceeding their water rights include Delta Water Association (198 afy1 exceedance), Flemings Platt Water Association (2 afy exceedance), Guide Meridian Water Association (27 afy exceedance), Skookum Chuck Water Association (60 afy exceedance), Tall Cedars Estates Water Association (14 afy exceedance), and Wickersham Water Association (8 afy exceedance). The total exceedance is approximately 309 afy. No water rights information was found for Flemings Platt Water Association, Tall Cedars Estates Water Association, and Wickersham Water Association; consequently, it was assumed that these systems are relying on the groundwater permit exemption (RCW 90.44.050), which limits withdrawals to 5,000 gallons per day and a maximum annual volume of 5.6 afy, for group domestic use.

¹ Acre Feet Per Year



Figure 4: Water Rights Capacity Overview

The total annual water rights held by Group A community public water systems in the CWSSA and the build-out demands are shown in Table 3. This analysis is planning level in nature to help identify potential problem areas and does not represent a determination of the legal status of any water right. Analysis prepared in the individual water system plans will be more accurate and should be utilized if available.

	1 2	<i>v</i>
	Existing (2015)	Buildout (2065)
Total Annual Water Rights (acre-feet/year)	209,644	209,644
Annual Water Demand (acre-feet/year)	21,972	50,864
Surplus Water Rights	187,6872	158,781
Note: To be conservative, it has been assumed that no additional w	water rights will be obtaine	ed in the future.
Note: Buildout represents estimated year 2065 data for urban syste	ems and buildout demands	for rural systems

Table 3: County-wide Water Rights Summary for Group A Community Public Water Systems

The water right capacity analysis is intended to provide some perspective on the potential water resource requirements facing the County. It is acknowledged that future reduction in usage patterns, land use policy and/or water resource policy, and other factors are key variables in a supply plan. Subsequent water resource planning efforts and individual water system plans are expected to further refine these numbers as part of an effort to quantify the anticipated out-of-stream water demands for the County. Permanent interties and intertie agreements with nearby public water systems could be a viable option for meeting the existing demand.

Group A Systems: Water Quality Issues

Water quality issues throughout the County can be categorized as discussed in the following subsections from the Whatcom County 2016 CWSP update. State Office of Drinking Water and Whatcom County Code requires public water systems and private water supplies to comply with water quality standards that

vary depending on the type of water supply being developed. Public water systems that have contaminants exceeding the Maximum Contaminant Levels (MCLs) specified in WAC 246-290-310 will not be approved. The most common drinking water contaminants are bacteriological, nitrate, and arsenic.

Bacteriological Contamination Bacteria, viruses, and protozoa (such as Giardia lamblia and Cryptosporidium) are drinking water contaminants that can rapidly cause widespread and serious illnesses. These microbes primarily come from human or animal wastes that wash into lakes and rivers or that rain or irrigation water carry into shallow groundwater aquifers. An aquifer is an underwater storage area of rock, sand, or gravel.

Systems that use surface water treatment are at higher risk of biological contamination and rely heavily on effective treatment to ensure public health so microbiological contamination is rare. Surface water sources must be consistently treated to remove bacteria. Failure to operate and maintain the surface water treatment or ground water disinfection treatment systems will usually result in bacteriological maximum contaminant limit (MCL) violations.

Ground water sources are much less susceptible to bacteria contamination. In general biological risk in ground water is such that contamination comes from the grounds surface and moves downward into the aquifer. Water systems that use groundwater from shallow aquifers, which may be susceptible to contamination, are commonly required to chlorinate (disinfect) the water. Water from systems supplied by deep, protected wells is less likely to be contaminated.

One of the major most prolific aquifers in Whatcom County is the Abbotsford Sumas aquifer which is shallow ground water. There are septic systems, agriculture, and businesses using the rich land above this aquifer and there is a relationship between what happens on the grounds surface and what occurs in the drinking water in this shallow unconfined aquifer.

In general, causes for violations in ground water systems are attributed to improper well construction, groundwater under the direct influence of surface water, lack of reservoir maintenance, improper disinfection of repairs and new lines, improper sampling technique, disinfection system malfunction, and cross connections. Except for unusual circumstances, such as a direct conduit of sewage into an aquifer in the immediate vicinity of a well, the causes of bacteriological contamination in distribution systems are easily corrected through operation and maintenance procedures.

Water systems test for the presence of total coliform and E. coli, two kinds of bacteria that signal the presence of human or animal wastes. When these bacteria are found in a water sample, the water supplier must immediately conduct further testing, look for the source of contamination, and in some cases, increase water treatment. If the problem appears serious, the water supplier must inform all customers about the problem and instruct them to use bottled water or boil their tap water before they drink it.

According to ODW records, 19 water systems in the Whatcom County performed coliform tests that showed a presence of the bacteria in 2017, down from 38 in 2013.

Nitrate Contamination Nitrate is a chemical found in most fertilizers, manure, and liquid waste discharged from septic tanks. Natural bacteria in soil can convert nitrogen into nitrate. Rain or irrigation water can carry nitrate through the soil into groundwater. Nitrate most often affects water from shallow unconfined aquifers and poorly constructed, or improperly located wells. Nitrate contamination is particularly hazardous for infants and pregnant women. Nitrate impairs the ability of red blood cells to carry oxygen. In most exposed adults and children, red blood cells rapidly return to normal. But infants can experience a serious health condition called methemoglobinemia or "blue-baby syndrome."

According to ODW records, 18 public water systems have had at least one water quality sample from January 2005 to June 2015 that exceeded the MCL for nitrate, which is 10.0 milligrams per Liter (mg/L). Of those systems, 10 have average nitrate concentrations greater than 10.0 mg/L, 5 have average nitrate concentrations between 5.0 and 10.0 mg/L, and 3 have average nitrate concentrations less than 5.0 mg/L.

All public water systems monitor annually for nitrates and when annual monitoring indicates nitrate levels above 5 mg/L, monitoring increases to quarterly. Any existing system with nitrates greater than 10 mg/L (the MCL) must provide treatment. Systems treating for nitrates are required to sample monthly to ensure the treatment is working properly.

A study² showed that the majority of nitrate contamination to groundwater occurs in the Abbotsford-Sumas aquifer in British Columbia Canada. This study concluded that the main contributors to nitrate in groundwater were dairy manure applied to cropland, mineralization of soil organic matter, inorganic nitrogen fertilizers, leakage from manure lagoons, redisposition of nitrogen volatilized from manure, septic tank effluent, and residential fertilizer use.

Most of the impacted systems are located in the northern part of Whatcom County, near the City of Lynden, with the source of supply being the Abbotsford-Sumas aquifer. This particular aquifer is susceptible to nitrate contamination because it is unconfined, it is relatively thin (approximately 40 feet thick), and the depth to the water table is often less than 10 feet. Figure 5 shows in blue the spatial distribution of the water system service areas that are impacted by nitrate concentrations above the MCL in at least one of their sources. Some systems are blending sources to reduce the nitrate concentration, some systems have secured an alternate source, while others continue to exceed the MCL.

One option to assist water systems dealing with high nitrate groundwater is the transmission of water from uncontaminated sources, such as the City of Blaine, City of Sumas, PUD, and City of Lynden. The biggest challenges to this option is the long distance, associated high cost (Blaine, Sumas, and the PUD), and water right uncertainty (City of Lynden). This has been and continues to be studied in relation to the broader Nitrate challenge and water resource planning overall.

Arsenic Most arsenic in drinking water comes from rock formations that contain arsenic. Groundwater that flows through these rock formations can dissolve the arsenic and carry it into underground aquifers, streams, or rivers. High levels usually occur only in groundwater. The level of arsenic in groundwater varies widely.

Elevated arsenic levels in Whatcom County are found in systems using a groundwater source and is the result of the natural weathering of certain types of arsenic-bearing bedrock and sediments, as opposed to human contamination. Figure 5 shows in brown that elevated arsenic in groundwater is most prevalent in southern and western Whatcom County, with five of the systems being located on northern Lummi Island. All of these systems have moved either to a new source or are blending their water or treating it to achieve arsenic levels that are below the MCL.

² The United States Geological Survey completed a study titled *Hydrogeology, Ground-Water Quality, and Sources of Nitrate in Lowland Glacial Aquifers of Whatcom County, Washington, and British Columbia, Canada* (Water-Resources Investigations Report 98-4195) in 1999.



Figure 5: Systems impacted by Nitrate or Arsenic contamination above the MCL

Group A Systems: Operating Permit Status

In evaluating public water systems and their ability to provide water to their customers now and in the future, there are several factors that must be considered. Many of these factors are addressed by the DOH Operating Permit and related Water Facilities Inventory process, which considers the capacity of the system, the number of existing connections, and the number of approved connections for future use.

It is important to recognize that Operating Permit status is only a high level snapshot of the systems engineering design capacity and associated compliance in concert with the information provided by the system through the annual Water Facilities Inventory. The Operating Permit status does not address the ongoing technical, managerial, or financial capacity of the system.

DOH issues the water system a color-coded operating permit representing the system's compliance status. The following permit colors are assigned to Group A community public water systems. Non-community water systems are not assigned operating permit colors from the DOH.

Green — In compliance with all DOH requirements. Adequate for existing uses and additional connections up to the approved number of connections, unless it is already at capacity.

Yellow — In compliance with all DOH requirements; however, the system was notified to submit a water system plan and has not satisfied the planning requirement or is under a compliance agreement for a state significant non-complier violation. Adequate for existing uses and additional connections up to the approved number, unless otherwise limited by a compliance agreement.

Blue — In compliance with DOH requirements. However, the system does not meet design approval requirements or has exceeded the number of approved connections established by DOH. Adequate for existing uses, but not adequate for adding new connections.

Red – In non-compliance with DOH requirements. Inadequate for existing uses and no additional

connections are allowed. This may result in denial of home loans, building permits, on-site sewage disposal permits, food service, liquor licenses, and other permits or licenses for properties served by the system.

The breakdown of the operating status for the 102 Group A Community water systems is shown in Figure 6. No systems currently have red operating permits. It should also be noted that one of the systems with a yellow operating permit has been consolidated with a system holding a green operating permit.



Figure 6: Group A Community System Operating Permit Status

Group A Systems: Number of Connections Available

When the County identifies an anticipated population increase in a specific area, it is important to determine whether the public water system slated to serve that population can, in fact, provide that service.

Below is a summary of the 82 non-government Group A Community systems and the approximate number of approved connections available based on data from the ODW Sentry Database.

- 28 Blue/Yellow Permitted Systems (34%): no new connections available
-) 54 Green Permitted Systems (66%): limited new connections available

0	7	Systems (8%)	w/0	Connections Available
0	23	Systems (28%)	w/<10	Connections Available
0	12	Systems (15%)	w/11-50	Connections Available
0	12	Systems (15%)	w>50	Connections Available

One third are operating under either blue or yellow operating permits with no connections currently available. Another third operating with a green permit have less than 10 connections available. About 15% have up 10-50 connections available, and another 15% have more than 50 connections available.

Figure 7 provides a difference view of connection availability, again based on the ODW Sentry database, with those areas colored dark blue (government systems) and green (non-government systems) having adequate connections available to meet future build out demand. Areas shown in yellow have limited connections available for current demand but cannot meet future demand, areas in light blue have no connections available, and areas shown in orange cannot even meet current demand.



Figure 7: Water System Connection Availability

Group A Systems: Conclusions

Forecasts suggest that the population of Whatcom County will increase by approximately 70,000 people by 2036, and approximately 200,000 people by 2065. The projected 2065 population is nearly double the existing population. This additional population will place increasing demand on the County's public water systems.

On a county wide basis, the public water systems collectively hold more than enough quality water rights to meet the projected demand. However, only a few individual water systems have excess water rights and the vast majority of systems have insufficient water rights. In the future, it will be important for systems to work together to meet projected demands. The County and the PUD will play an important role to encourage cooperation and resource sharing among systems.

The community needs to be cognizant of current small water system reality and have a clear understanding of our needs or desired reality so that we can strategically work together as a community to bridge the gap between supply and demand for safe drinking water. Figure 8 provides an overview of the Whatcom County small water system landscape.



Figure 8: Bridging the Gap from Current Reality to Desired Reality

PUD No. 1 of Whatcom County Background and Drinking Water History

PUD No. 1 of Whatcom County is a quasi-municipal entity governed under the Revised Code of Washington Title 54. The PUD delivers industrial water and potable drinking water in Whatcom County and is uniquely qualified to support small drinking water systems in Whatcom County. The PUD has a long history of supporting local small water systems in their efforts to run as independent utilities capable of providing safe, reliable, and sustainable drinking water to their communities.

Over the past 10 years, the PUD has partnered with ODW on multiple drinking water capacity building efforts such as providing technical, managerial, and financial capacity support, evaluating and facilitating solutions to ground water nitrate contamination, aiding systems in consolidation with neighboring water systems, and helping to secure funding for construction of intertie pipelines.

The PUD believes that many of the challenges facing water systems require one-on-one technical support facilitated by state and local agencies in partnership with qualified technical support providers at the local level. Small systems are predominately governed and operated by volunteers and are in need of local technical support resources with flexibility to assist each individual system's needs. ODW has a lot of useful resources, knowledgeable staff, and many tools to be successful, however they simply do not have the time and manpower to address all the needs and not positioned with the local presence and engagement. The pilot emphasized the effectiveness of meeting local needs with trusted local resources that builds on the solid foundation established by the ODW. The vision is that local partnerships, like those explored in the pilot, will help bridge the gap.

Over the past seven years, the PUD has partnered with the Office of Drinking Water and local technical support providers on a number of successful capacity building efforts in Whatcom County including:

- Providing technical, managerial, and financial capacity support.
- Evaluating and facilitating solutions to ground water nitrate contamination issues.
- Facilitating consolidation of small water systems with a neighboring system.

Assisting with fund applications and construction of intertie pipelines.

Below are some of the PUD's technical support efforts:

- 1. PUD facilitated the North Whatcom County Regional Source Feasibility Study (NWCRSF) which explored the regions nitrate contamination of public water system ground water wells. Completed in 2010, the study identified options to address the nitrate contamination of 3 systems including potential consolidation with adjacent purveyors.
- 2. PUD applied for facilitated a Jobs Act Now Grant that provided water systems with planning and engineering to further develop the consolidation options identified in the NWCRSF. The grant also provided for the construction of two emergency interties identified as part of the feasibility study.
- 3. PUD partnered with the City of Sumas on a successful water rights change application process that resolved Meadowbrook Water Association water rights deficiency and in turn allowed Meadowbrook to assist two neighboring systems with their source nitrate contamination problem identified in #1.
- 4. PUD facilitated a funding application for consolidation of Northwood Park Water Association (Northwood Park) with Meadowbrook Water Association (Meadowbrook), identified in the NWCRSF, to eliminate Northwood Parks nitrate contaminated source. The application was funded with 50% low interest loan and 50% grant. One of two emergency interties constructed under the Jobs Act Now Grant became the permanent intertie for this consolidation effort.
- PUD facilitated a grant application that was funded in full allowing Covenant Christian School to consolidate with Meadowbrook Water Association and abandon its nitrate contaminated source. This was possible because of consolidation between Northwood Park and Meadowbrook (No. 4 above).
- 6. PUD also facilitated a funding application for consolidation of Northwood Water Association with Meadowbrook Water Association, identified in the NWCRSF, to eliminate Northwood's nitrate contaminated source. The application was funded with 50% low interest loan and 50% grant. The second of two emergency interties constructed under the Jobs Act Now Grant in #2 became the permanent intertie for this consolidation effort.
- 7. PUD facilitated a transfer of the Northwood Water Association source and associated water rights to the City of Lynden which in turn provide enough income for the Northwood Water Association to pay off in full its consolidation loan received in #6.
- 8. PUD facilitated a funding application for Rathbone Park Water Association to secure an alternate source of water to address their nitrate contaminated source and corrosion control. The application was funded with a 50% low interest loan and 50% grant. The water system was unsuccessful in securing water rights for use of the alternate source.
- 9. PUD facilitated a feasibility study for Central City Water Association that identified consolidation with the City of Ferndale as the best option. The PUD facilitated a funding application for consolidation with the City of Ferndale. The application was funded with 50% low interest loan and 50% grant followed by successful consolidation.
- 10. PUD facilitated a grant application that was funded in full allowing Everson Livestock Auction and Café, with an E.coli contaminated source, to consolidate with an adjacent water system, allowing the contaminated source to be abandon.
- 11. PUD facilitated a feasibility study for Skookum Chuck Water Association to explore consolidation with Roederland Water Association. The Associations continue to explore governance and funding options.
- 12. PUD facilitated a grant application for consolidation of Radar Farms farm housing community with an adjacent water system. The water systems continue to explore governance and funding options.

- 13. PUD continues to support Everson Water Association and Hampton Water Association as they explore governance and funding options for consolidation with Meadowbrook, which was identified during in the NWCNFS in #1.
- 14. PUD facilitated a feasibility study for the South Lake Samish community facing seasonal bluegreen algae toxins in their surface water source. The feasibility study identified options for alternate sources of water, consolidation with adjacent purveyor, and a new regional source water treatment system. The community continues to explore their governance and funding options.
- 15. PUD provided planning, technical and funding application support for Calmor Cove Water System that was in need of replacement and considering possible expansion of its surface water treatment plant. The feasibility study for the South Lake Samish community (#14 above) identified expansion of the Calmor Cove surface water treatment plant as an option to supply drinking water to the South Lake Samish Community.
- 16. PUD is facilitating an initial feasibility study for restructuring and possible consolidation of Calman Water System with adjacent Guide Meridian Water Association. The governing bodies have agreed on a phased approach beginning a wholesale intertie, perfection of water rights, and ultimately consolidation if funding for necessary facilities if feasible.

The above examples illustrate the potential for capacity development and water system sustainability when state and local agencies partner together alongside local drinking water communities.

Technical, Managerial, Financial Capacity Background and Theory

A primary goal of the Office of Drinking Water is to assist small Group A systems in acquiring and maintaining the Technical, Managerial, and Financial (TMF) Capacity needed to ensure safe, reliable supplies of drinking water.

Definition of Capacity:

A water systems capacity is the system's technical, managerial, and financial capability to achieve and maintain compliance with all relevant local, state, and federal plans and regulations.

In other words, the system has the knowledge, tools, and resources to ensure it can provide safe and reliable drinking water now and into the future.

All water systems, regardless of size or other characteristics, can benefit from a program of continuous improvement that includes self-assessment, strategic planning, and monitoring for accountability and performance. Doing so allows a system to:

- Protect public health by ensuring consistent compliance with drinking water standards, including federal and state regulations and other applicable standards of performance.
- Provide service to their existing customers and serve new customers in the future.
-) Enhance performance beyond compliance through measures that bring about efficiency, effectiveness, and service excellence.
-) Save costs associated with minimizing liability, prolonging the useful life of infrastructure, and running the system efficiently.
- Request funds from the Drinking Water State Revolving Fund (SRF) loan program and others.

Over the past decade new and expanding water systems are required to show technical, managerial, and financial capacity in their water system plan or small water system management program. However, most small systems were established before the emphasis was placed on capacity and very few small systems are expanding such that they would be required to demonstrate current adequate capacity.

Ongoing capacity building efforts have helped systems but many small community water systems are struggling to maintain capacity and some are on the verge of failing. Capacity technical support is intended to provide a broad range of support through operator training, workshops and one-on-one technical assistance to help systems improve their capacity to run as independent utilities capable of providing safe, reliable, and sustainable drinking water to their communities well into the future.

The strategy behind this new approach is to support local water systems by building on local relationships and utilizing local expertise to assist small systems with the knowledge, tools, and resources needed to build and maintain capacity.

Methodology

The purpose of the pilot Technical Support Program is to develop a local outreach program to help Whatcom County water systems increase their technical, managerial, and financial (TMF) capacity to successfully run as sustainable, independent utilities.

The scope of work included four primary tasks listed below. In this section we focus on the methodology and findings of Task 1 and Task 2.

- Task 1: Assess water system capacity training need and develop a technical assistance strategy.
- Task 2: Offer Water Systems Capacity Technical Assistance training and support.
- Task 3: Report on Capacity Assessment and Technical Assistance pilot. (This report).
- Task 4: Present the pilot results and experience. (2019 following completion of pilot)

Task 1

Task 1: Assess the water system capacity training need and develop a technical assistance strategy.

Task Overview: "PUD No. 1 of Whatcom County will communicate with all Group A water systems in Whatcom County to understand the local capacity training need and seek input from these systems on effective technical assistance delivery mechanisms. This assessment is intended to obtain input beyond the current means of the Washington State Office of Drinking Water and position the PUD to successfully market, deliver, and document water system capacity technical assistance services at the local level. Task 1 will help the PUD to establish the groundwork for future efforts."

- Task 1.1 Compile existing data on Group A water systems in Whatcom County to review indicators of TMF capacity or lack thereof.
- Task 1.2 Conduct outreach to water systems to obtain input on needed technical assistance topics and effective delivery mechanisms.
- Task 1.3 Develop technical assistance training and community strategy.
- Task 1.4 Develop performance measures to meet specific goals.

Task 1.1

Compile existing data on Group A water systems in Whatcom County to review indicators of TMF capacity or lack thereof.

Methodology

The strategy is to compile a single database of the most current information capacity information available for Group A Systems in Whatcom County. A copy of the resulting electronic database is available with the final report.

The following is a list of the primary data sources used to compile the TMF Capacity database.

-) ODW's Whatcom County Planning Landscape (Appendix #1)
-) ODW's Capacity Assessment Survey (Appendix #2)
-) ODW's Submittals Log data
-) ODW's Sanitary Survey's Capacity Summary (Appendix #3)

-) TSP Survey: Questions and Results (Appendix #4) <u>http://whatcomwatersystems.org/how-can-we-help.html</u>
- Whatcom County's Coordinated Water System Plan online <u>http://whatcomcounty.us/856/Drinking-Water</u>
- System Chlorination Requirements CT6 (Appendix #5)
- J Missing Chlorination Reporting (Appendix #6)
-) ODW's Sentry Database Online <u>https://fortress.wa.gov/doh/eh/portal/odw/si/Intro.aspx</u>
-) Operating permit status (DOH Sentry)
- J Sample Exceedances Nitrate, L/C, Coliform, (Appendix #8/ DOH Sentry)
- Information provided by individual systems from their: governing body, manager, or operator

Information for each water system was grouped into two major categories: General System Information and Capacity Information:

1. **General Information**: General information about water systems was essential to allow for sorting and/or grouping of systems for further analysis and outreach efforts. For example general information allowed for quickly sorting of systems by type, such as government or non-government, private or Association, and size by population and number of connections to identify small systems with less than 1,000 connections which are the focus of the pilot.

General Information included:

- a. Water System Name
- b. Water System ID
- c. Operating Permit Color: Blue, Green, Yellow, Red
- d. Operator Certification Required
- e. Source: Ground Water, Ground Water Under Influence, Surface Water
- f. Treatment Type: Disinfection, Filtration,
- g. System Type: Community, TNC, NTNC
- h. Ownership Type: Association, City/Town, County, Federal, District, Private
- i. Number of Connections
- j. Population Served
- 2. **Capacity Information:** Categories indicate areas where systems may benefit from technical support and help focus training and outreach efforts. For example, identifying systems with a Yellow, Red, or Blue operating permit helped identify and prioritize which systems to reach out to and offer technical support.

Capacity Information included:

Specific Compliance Issue	Water Quality Issue
J Significant Non Compliance) Disinfection Issue
J Lacks Design Approval) Recent history of Coliform A/P
J Exceeds Approved Connections) Water Quality Exceedance last 3 years
Lack of Certified Operator) Candidate for Consolidation
) Needs Planning Document) Candidate for Intertie
) Water Rights deficiency) Sanitary Survey issues to be addressed

Capacity Indicators are summarized in Table 4 below along with a number to indicate how many systems were initially identified for outreach in that area. Early outreach focused on priority

health related issues, important topics for local water systems such as water rights, and intertie/consolidation opportunities which require long term relationship building.

The superscript number in the table is the number of systems engaged with during the first six months of the pilot. This is significant because the pilot program had not been developed yet and systems were responsive to the offer for technical support.

fic Compliance Issue	Inificant Non Comp	ks Design Approval	seds Approved Conn	tertified Operator	nning/SW/SMP/TSP	Water Rights	Water Quality	Hypo Disinfect/Req'd	VP w/Pres 2015/2016	Exceedance 14/15/16	solidation Potential	Intertie Potential	y Survey - See Details	
Spec	Sir	Lac	Exce	0	Pla			CT6 -	Coli /	Sample	Cot		Sanita	
33	63	53	7	0	0	62	0	20	0	0	4	63	0	0

 Table 4: Summary of Capacity Indicators

Data collected from the most recent Sanitary Survey's performed by the ODW or Whatcom County Health Department (WCHD) further identified areas of capacity that may benefit from local technical support. Table 5 and Table 6 below summarize and group the most common Sanitary Survey findings as indicators of capacity and number of systems for which the capacity indicator appeared.

Intertie Options	DS/NDM Operator	WTPO Operator	SWSMP Prepare/Update	Coli Monitoring Plan	Chlorine Samples/Reports	Cross Connection Control Pl	O&M Manual	Component Inventory & Assess	WUE/Loss Control	System Approval/Design/Analy	As-Built/Record Drawings	System/Controls Schematic	Distribution Mapping	Well Head Protection Plan	Flushing Program
						E		ment		/sis					

Table 5: Sanitary Survey Findings: General/Administrative/Planning

Source Water Meter	Source Inverted Vent/Screen	Source Raw Water Sample Tap	Decommission Old Well	Tank Hatch Inspect/Pictures	Tank Hatch Seal R/R	Tank Overflow Screening R/R	Screening Other	Service Meters	Compressor: Oil-less/FG/Sep	Hydrant Maintenance Program	Valve Exercising Program	ASME PRV	Other O&M Notes
9	3	10	5	12	1	5	10	0	5	0	2	9	54

Table 6: Sanitary Survey Findings: Operational/Mechanical

Findings

Available databases provided a good basis for identifying general and specific indicators of capacity, all of which proved to be very helpful throughout the pilot and specifically for developing capacity training and technical assistance focus and efforts. Data sources ranged from a high level of detail on a wide variety of areas to some bigger picture macro assessments, all of which were helpful in understanding system capacity.

In general we found several key indicators or trends most indicative of a systems overall capacity.

-) Is the systems operating within its approved water system plan vs operating outside a plan or with no plan at all?
- J Is approved treatment in good working order vs insufficient or non-working treatment and most commonly inadequate disinfection?
- J Is the system current on water sampling and reporting such as monthly chlorine residual, Water Use Efficiency, Consumer Confidence Reports or is there a history of missing information?
- Are deficiencies promptly addressed vs unresponsiveness or failure to address deficiencies and associated recurring problems?
-) Is there an engaged and knowledgeable system operator?
-) Is there an informed and engaged governing body?
-) Is there good communication between the governing body and system operator that provides for planning and execution?
- Does the system recognize the value of water and are they willing to invest in long term sustainability?

Task 1.2

Conduct outreach to water systems to obtain input on needed technical assistance topics and effective delivery mechanisms.

Methodology

The outreach strategy included three primary components:

- 1. Review of prior water system inquiry/questionnaire
- 2. Interview local systems regarding value of surveys/questionnaires
- 3. New survey/questionnaire of local systems

1. Review of prior water system inquiry/questionnaire

A) ODW "Managerial and Financial Capacity Self-Assessment" (Appendix #2) The PUD began with a review of the recent ODW Statewide "Managerial and Financial Capacity Self-Assessment" distributed to Group A Community Systems with 100-1,000 connections, often as a precursor to an upcoming sanitary survey. Of the 562 systems only 16 from Whatcom County responded with larger systems over 200 connections representing 75% of respondents.

In summary, the ODW "Managerial and Financial Capacity Self-Assessment" did not provide representative capacity information for small Group A water systems in Whatcom County.

B) Survey of Small Whatcom County Water Systems. (Appendix #9)

The PUD reviewed a 2008 independent survey of small Whatcom County Group A Community water systems with less than 200 connections resulting in 16 responses or about 32%. The general observations from this survey are:

-) Local surveys are likely to have a better response.
- Responses are likely to be more representative of the local issues, culture, and challenges.
- J Issues identified were consistent with local need for capacity technical assistance.

2. Interview local systems in regards to willingness, objections, and value of surveys

In addition to information gleaned from prior surveys, there was opportunity for one-on-one interaction with those who attended workshops and received technical assistance during the pilot.

3. New Survey of local systems

Based on the knowledge of prior surveys and the positive response from early feedback by local systems, a new survey was prepared to focus on small Group A Systems in Whatcom County. The survey was comprised of leading self-assessment questions in each area of TMF Capacity. The survey also included opportunities to indicate and/or request technical assistance in general and specific areas of capacity based on findings from Task 1.1 (data base), prior surveys, and local interaction. A copy of the survey questions and results is included in Appendix #4 and available on line at www.whatcomwatersystems.org/how-can-we-help.

Findings

Inquiry/questionnaire surveys are an opportunity for water system representatives to review and selfassess their systems capacity and to help inform the direction of future training and technical assistance.

Feedback regarding past water system surveys / questionnaires, particularly those by public agencies, indicated some confusion and skepticism regarding the purpose of the survey and how the collected data might be used. Common questions included: "Is this required?" and "How would the submitted information impact their system?"

The PUD was very pleased with the strong participation and generally positive response to the pilot survey / questionnaire described below. The pilot survey provided valuable insight for developing one-on-one technical support, group workshops, the Whatcom County water supply symposium, and future TMF Capacity technical assistance development. The pilot survey / questionnaire was also valuable because we learned that systems seem to be more responsive and receptive to a locally based survey!

Task 1.3

Develop technical assistance training and community engagement strategy.

Methodology

Building on the information gathered in Task 1.1 and Task 1.2 including but not limited to:

- Z Analysis of Data Collection
- Z Feedback from customers
- Z Knowledge of the local drinking water community
- Z Local agency efforts
- Z Current events

The PUD developed a list of possible training and community engagement opportunities and grouped them into the three TMF Capacity areas shown in Table 7 and 8 below.

	1 3	1		<u>, a</u>	<u>p</u> (6.3		Teo	hnic	al (N/	R/P)	<u>.</u>	8.2	ş 3		<u> </u>	<u>, </u>	-	_		Man	agə	rial	(N/	R/P)		Fin	anc	ial (N/R	P)
Utility Ass/Sani Survey (T)	Planning (T):	Mapping (T)	Engineering (T)	Design Approval (T)	WUE (T)	CCR (T)	Consolidation (T)	Intertie (T)	Meintenance & Operations (T)	Services Meters (T)	Cross Connection Control (T)	Operator Distribution (T)	Operator Treatment (T)	Operator Training (T)	Water Quality (T)	Chlorination (T)	Coliform Monitoring Plan (T)	Water Quantity (T)	Water Rights (T)	Governance (M)	Succession Planning (M)	Training Board (M)	Bylaws (M)	Policy (M)	Insurance (M)	Procedures (M)	Budgchng (F)	Funding (F)	Rate Setting (F)	Utility Billing (F)	Bookkeeping (F)

Table 7: Technical, Managerial, Financial Capacity

Next the PUD identified specific strategies for Training and Community Engagement.

- 1. Self-Assessment Capacity Survey for Small Water Systems
- 2. Workshop Series
- 3. One-on-one Technical Assistance
- 4. Public Presentations at PUD Commissioner Meetings
- 5. Participation in 2017 Water Supply Symposium.
- 6. Participation in countywide drinking water supply planning efforts.
- 7. Identify and support opportunities for restructuring and consolidation.
- 1. Self-Assessment Capacity Survey for Small Water Systems (See Task 1.2.3)
- 2. Workshop Series:
 - o 2017 Workshops:
 - Water Rights: Understanding and Management. (Appendix #10)
 - Water Use Efficiency: Leak Detection-Terms, Trends, Technology, Benefits.
 - Water System Risk Management: Liability, Insurance, Hydrant Management. (Appendix 11)
 - o 2018 Workshops:
 - System Mapping using GPS and Google Earth (Appendix12: Enterprise Terrace System)
 - Chlorine Residual Testing and Lab Skills (ODW Hands On Skills Training)

- 3. One-on-one technical assistance.
 - Reach out to systems identified as candidates for technical assistance based on capacity indicators identified from databases including sanitary surveys.
 - Respond to request for technical assistance received from the ODW, WCHD, referrals, and direct contact from systems. Examples include assistance with sanitary survey findings, water quality emergency response such as positive total coliform and E.coli, and Ground Water Rule Level 1 & 2 Assessments.
 - Train and assist with GPS data collection and mapping of system facilities.
 - Research and identify opportunities for utility consolidation and/or restructuring. Facilitate communication between utilities regarding the mutual benefits of increased capacity from restructuring, interties for permanent or emergency supply, or consolidation.
- 4. Public Presentations at PUD Commissioner meetings to increase understanding of Small Water System drinking water needs and opportunities for capacity development.
 - o 9/16/2016 Pilot Program Introduction (Appendix 13)
 - o 3/14/2017 Research and Database Findings (Appendix 14)
 - o 3/27/2018 Mapping Assistance Sample (Appendix 12)
 - o 11/13/2018 Pilot Program Project Conclusion (Appendix 15)
- 5. Participation in 2017 Water Supply Symposium. (Appendix 16)
 - General session presentation highlighting drinking water system issues and participate in panel discussion.
 - Develop networking opportunities for Drinking Water System governing bodies, managers, and system operators.
- 6. Participation in countywide water supply planning efforts.
 - Drought Contingency Task Force to explore risk management and potential mitigation in the event of a drought such as conservation and emergency interties.
 - WRIA1 efforts including the Planning Unit tasked with Hirst Decision and Hirst Fix (ESSB 6091) plan with regards to impact to and the role of public water systems.
 - Whatcom County Coordinated Water System Plan update directed by Whatcom County Council to address timely and reasonable service in rural areas.

Findings

The key to each training and community engagement strategy was to capture the attention of the target audience. We appealed to something that interested them in order to get them in the door so we could learn more about their needs and concerns. All of the strategies were successful and provided a unique opportunity hear about local needs and build local trust and network with neighbors who may be or have already wrestled with the very same issues.

Task 1.4

Develop performance measures to meet specific goals.

Methodology

The goal was not only to identify statistical performance criteria for the pilot but also to develop a means of tracking engagement with each system to better understand the demand, types of support needed, and effectiveness of technical support.

The PUD began by considering various performance criteria including but not limited to:

-) Number of systems contacted during course of pilot program and method
-) Number that attended group event/activity
-) Number of systems receiving one-on-one TMF Capacity assistance
-) Number of interactions
- Method of interaction
-) Number of funding applications submitted including type
 - Number of potential interties, consolidations, restructurings explored
- Types of capacity assistance provided
-) Progress by each systems in a given area of capacity development
- J Hours spent on outreach activities
-) Hours spent providing one on one technical assistance
- J Hours spent conducting group training/workshops
- Hours spent on presentations

In order to track not only the technical assistance event but also recap the assistance provided along with any direction or next steps recommend, two Technical Memorandum's and a Technical Memorandum Summary were developed to meet the goal.

- J <u>Technical Assistance Memorandum (Figure 9: Sample) (Appendix 17: Template):</u> A Technical Memorandum was established for each system to log the interactions with each system over time.
-) <u>Technical Assistance Memorandum: Supplemental Activity Log (Figure 10: Sample) (Appendix 17: Template)</u>: A more detailed summary of each significant or substantial TMF Assistance event with a system to documents the specific event including but not limited to: the need; assistance provided; agreed upon system goal or deliverable; next steps or tasks towards the task or goal; identification and recognition of obstacles and/or barriers going forward; and a timeline or target for reaching the goal.
-) Technical Assistance Memorandum Summary (Appendix 18: Summary Log): An overall summary by system of the number of interactions for each area of capacity.

				ALC: NOT ALC	Sugar and a second		A CARLON AND CO
System ID:	2000 B	Reference No.:	N21873-0	System ID:	Sere: ID	Leference No.:	623073-0
System Name:	Sellen: Name	Lead Entity:	PUD At of Whatcom County	System Hame:	Weiter Sterne	Level Entity:	PUD #1 of Whetears Co
System Rep.	Approved Webs	Piq: Manager:	Dave Olion	System Rea:	Waters Bett	Proj. Manager:	Date Clean
Initial Contact Date:	Date convolution of	meal contact Method:	Chicow an ten	Initial Contect Dete	Dista Litti (plu AAA	Initial Conject Method:	Choose on Nem-
Halared by:	Barra			Referred for	Harse	I LOUD DO AND COMPLETE	un un de la companya
System Background.				System Background	-Bottime Kneekske	ioi .	
Relief Las				Activity Report:			
Coto:	Price and indiana	Cablers / Inchaster	and the	Description			
Description	Sight Statempton of	avilation Camera Profile		Click here to enter les	1		
Take marks	Click hour to refue t	tur.	2	-			
	COLUMN TO THE PARTY						
Carla.	Date tringed with	Satjact. Charmana ta e	erver taktt.				
Cesonpoort.	or of areau population	ssinin.					
Teld dires.	out (the to plus)	Arter	î				
Date	Date mm/od/why	Sabject Clidthere to a	erne i faiezh.				
Description	Or of Deap polonial	####.17Y.					
Take swey:	Ock have to enter t	3147.+	-				
Fare	Bate monitoff.www.	Subject Circles and	norr tear.				
Description	Batel Statistican	2110/01/					
Take sway	Click here to enhere	TN1					
Date	Wate or relative to	Subjects Childraneters	The Dark.				
Description	to other second and other	with the					
Take away:	tilicit here to enter 1	44Ge					
Cate	Data mm/cd/w/w	Sablect: Clitchemitole	met back.				
Description	De la fi Dallar pilon of	atthing.					
Take avent:	Cick here to enter t	19 ML					
Cone	Date ton its have	Sablect Cliftchamme	etsel (put				
Description	Relef Sectroplen of	activity	548. 5491	10 mm	Land and the second		
Take aways	Click here to testet t	74		System task Let	Linds here to entire t	HeC.	
fue	there existing a second	School, Disktorence	the text				
Crescription .	ARE DESCRIPTION	City of City and City	100.000	Obstacles identified:	Ulo, here to enter i	ied.	
Take a wey	thick here to entite 1	(1.v).	5	25300509493533	0.00000000000		
	Water and the set of the set	Leave Land	1.4 1.0	Jessuines Mertillar	Dirt have in ground	WC .	
Carte	Date and add white	Satistics Cademanta a	FTHE ! NECK,	and the second s	and the state of the second	C.C.L.	
The second	Chick have to act the	Autority.		0.0977		1.43	
Table Borney;	SALCHING TO BE DE LE			System	Uspithere to enter t	18-C	
Cabe	Bate with the way of the way	Sablect Cliftchere of a	rtor i tino.	Representative	and the second second second		
Clescription	Brief Vesitinden al	TUNDA		2			
120P 3WIN	react power to reason a	14					
Date.	Sale minicial way	Subject: Clickhanatory	rms/1927,				
Description.	Shef pisa pointal	ECHVIN.					
Lator areas	A hole because the weights it	and the					

Figure 9: Technical Assistance Memorandum

Figure 10: Technical Memorandum Supplement

Findings

The Technical Memorandum was used on a regular basis and completed or updated after contact with each system based on observations and notes. In general, the Technical Memorandum was used consistently throughout the pilot project and served well to document the interaction and to inform future engagements of past activities and interactions. The Technical Memorandums were maintained and are available in electronic format.

Use of the Supplemental Technical Memorandum was initiated on a few occasions but we found it difficult to complete while engaged with the system representative for the intended purpose of having them agree to and sign the document while on site. There certainly was value in clearly identifying next steps with a general timeline for completing. However, we had to be careful to avoid creating a regulatory environment like a sanitary survey or special purpose investigation, although much of the same information may have been covered. More consideration needs to be given on how best to use the Supplemental Technical Memorandum.

The Technical Memorandum Summary shows at a glance the number of interactions for each system in a given area of technical, managerial, or financial capacity support. The Technical Memorandum Summary also provides a synopsis of the number of systems interacted during the pilot and overall number of interactions in each area of capacity. This tool serves to provide a measure of performance for the pilot.

Task 2

Task 2: Offer Water System Capacity Technical Assistance Training and Support.

Whatcom PUD will conduct workshops and/or attempt to meet with all Group A water systems (serving <1,000 connections).

Methodology

During the pilot, the PUD engaged directly with not only small Group A water system representatives and operators but also with the broader community including water resource planning groups and community leaders. Each of the primary technical assistance and support activities is listed here and reviewed in more detail below.

- 1. Promotion
- 2. Website
- 3. Workshops
- 4. Individual System Technical Support
- 5. Community Engagement
 - a) PUD No. 1 Public Meeting Presentations
 - b) 2017 Water Supply Symposium Presentation
 - c) Planning Unit Participation related to Hirst Decision and Hirst Fix (ESSB 6091)
 - d) Coordinated Water System Plan Update requested by County Council

Promotion

The PUD first introduced the Technical Support Program pilot with a press release in the local newspapers and on their website (Appendix 19). Whatcom County Group A water systems were also informed of the pilot by mail and email using the most current information available from the ODW and Whatcom County. Small Water Systems received information of upcoming workshops by mail and email. The website also provided contacts for more information.

The PUD worked hard at the beginning of the pilot to develop an email list for ongoing correspondence and to minimize the need and cost of mailings. However, the PUD found that it was still important to do at least one mailing for each significant outreach effort, such as workshops, to ensure contact with those who do not have or regularly check their email.

Initial response to locally available technical support was unexpected and in some ways overwhelming. In hindsight it is believed that the positive response was due to pent up need for one-on-one technical support not being met through the traditional classroom training environment and support contractors. This was a pleasant surprise and reinforced the need for local to local technical support.

Website

It was determined early on that a dedicated website was important to highlight the pilot Technical Support Program as well as provide easy reference for Technical Support content including background, training opportunities, reference material, and contact information.

The website can be found at <u>www.whatcomwatersystems.org</u> and evolved over the course of the pilot.
- A brief description of the primary pages is below and can be seen in full online:
- **Home**: Introduces the Technical Support Program and related background.
- > What is System Capacity: Provides the framework on which the TSP intends to support.
- **Technical Support**: Outlines the types of technical, managerial, and financial support available.
- > Workshops: Information on current and future workshop opportunities.
- > **Publications**: A quick reference library for many common technical support subjects.
- **How Can We Help**: Survey results including survey questions.
- **Contact Us**: Self-explanatory.

Workshops

As part of the strategic planning process for group training, the PUD considered several guiding questions:

- Who would the workshops appeal to: operators, managers, governing body, other?
- What subjects should be covered and how are they important to building capacity?
-) Why are these workshops different than other training that may already be available?
-) Where should the workshops be held, type of venue, etc.?
- What is the best date, day, and time to hold the workshops?

A core element of the Technical Support Program was building local relationships among the water system community and local professionals. The PUD also recognized that much of the training available focuses on the day-to-day operational aspects of a water system rather than subjects important to management and governance.

One of our objectives was to reach out to system representatives including governing bodies with direct influence over water system direction but that might not otherwise engage in capacity development training because it is not convenient or not simply for operators needing Continuing Education Units to maintain their Operator Certification.

As part of our group training development the PUD reached out to a few of the major water training organizations including WETRC, ERWOW, and PNWS-AWWA to inquire about training opportunities they had available that the PUD could host in Whatcom County. The PNWS-AWWA was ideally suited to help us with the new "Training In A Box" that provides all the tools necessary for a group to put on their own training program locally.

The PUD learned a great deal from the big three and want to thank them for their input and willingness to support our efforts. Each of these organizations was willing and able to support our local training efforts with their existing training curriculum. Had the PUD utilized their training the PUD's role would have been to facilitate, promote and ensure adequate attendance.

Based on feedback from the surveys, databases and sanitary survey indicators, and direct interaction with water system representatives and operators, the PUD developed the initial workshops to focus on areas of expressed interest. One of the important goals, in additional to Capacity Training, was to build relationships and trust in the PUD as a local resource and not a regulatory agency.

Group training primarily targeted issues and concerns identified during the survey and leaned toward management and governance rather than operations. Most of the workshops appealed more to governing body representatives than system operators. For this reason all but one of the workshops was held on a Saturday morning rather than during the workday so volunteer board members or operators could attend. We found that the majority of workshops attendees were managers and/or governing body members unless CEU's were offered. The only workshop held during a weekday was

the one that targeted certified operators and offered CEU's.

Each of the workshops conducted is outlined below:

- 1. Water Rights: Understanding what you have and how to manage it. (Appendix #10)
 - i. Western Water Law: First in Time/First in Right
 - ii. Municipal Water Law
 - iii. Components of a Water Right: Point of Withdrawal, Purpose of Use, Place of Use
- 2. Risk Management: Whose responsibility is it anyway? (Appendix #11)
 - i. Risk Management Considerations
 - ii. Who's Insured: Volunteers, Employee's, Operators
 - iii. Types of Coverage: Liability, Property, E&O, D&O, Vehicle (non-owned auto)
 - iv. General Liability is not enough: Governing Body Liability.
 - v. Hydrants & Fire Protection (RCW Liability Considerations).
- 3. Water Use Efficiency:
 - i. Introduction to Water Use Efficiency
 - ii. Unaccounted for water and impacts on water system planning
 - iii. Leak detection: Current Terms, Trends and Technologies in Leak Detection
- 4. System Mapping and GPS with Google Earth: (Appendix #12: System Map/Regional View)
 - i. Easy to use free google tools to map your system
 - ii. Components to map: Meters, Valve, Hydrants, Blow Offs, Wells, Water Mains
- 5. Chlorine Residual Testing and Lab Skills for Water Operators. Hands on Training.

Findings

It became clear both from the survey / questionnaire and during the community engagement events that there are two very different audiences as well as a gap between them: Governing body representatives and certified operators. Operators are more motivated by CEU's and managers or governing body representatives are more motivated by wanting to understand what needs to be done and how best to do it. Both groups are working in the same direction but from very different perspectives.

System operators were less likely to attend workshops that did not provide CEU's. The four Saturday morning workshops were well attended by the target audience of board members and the operators in attendance were typically part of the governing body. The PUD received confirming feedback from operators not in attendance that they were not generally interested in subject matter that did not impact them directly such as administration, governance, or management of their water system. The PUD also confirmed that most water operators prefer to attend training with CEU's on a workdays.

The PUD believes that the workshops met the goals of training, building relationships, and building trust in the drinking water community, particularly with system governing bodies. The PUD gained a great deal of respect for the major training organizations such as WETRC, ERWOW, and PNWS-AWWA and the important role they play in supporting capacity development, particularly when it comes to providing CEU's for certified operators.

System One-On-One Technical Support

The majority of the time spent during the pilot was providing technical support to systems one-on-one interacting with governing body members and/or operators. Task 1.2 outreach activities such as the press release, email, and mailers announcing the pilot program and the availability of technical support generated some inquiries and requests for support. Based on data collected during Task 1.1 and the resulting database, the PUD was able to identify and reached out to individual systems to offer assistance in a general or specific area of capacity.

Word of mouth and referrals were by far the most common and effective way of getting the

word out that technical support was available and making connection with systems in need. This was further evidence of the value of local communication and networking. The most common source of referrals and connection were:

- The Office of Drinking Water and Whatcom County Health Department.
- J Industry professionals such as laboratories and engineers.
-) Local vendors such as: parts houses, chemical suppliers, water treatment suppliers,
 - well drillers, equipment suppliers, pump repair and water main repair contractors, etc.
-) Water system governing body members, managers and operators.
-) Interaction with attendees during workshops.

Initially the PUD was surprised and in fact temporarily overwhelmed with the volume of requests and need for technical support. The PUD believe that a significant portion of the initial response was pent-up demand not otherwise addressed through traditional technical support resources such as the classroom training environment and statewide support contractors. The PUD also believe that a large part of the early response was due to having reached out directly to those systems identified in Task 1 as possibly having need for technical support.

One-on-one interactions with the PUD were tracked with a Technical Assistance Memorandum (Figure 9) described in Task 1.4. In some cases one-on-one interaction was short and did not necessitate an onsite visit. However, in many cases the PUD had the opportunity to provide more extensive technical support including onsite visits. It was common to have follow-up interactions which were also tracked on a Technical Memorandum.

It was during onsite visits that often provided had the opportunity to discuss a variety of capacity issues in addition to the initial inquiry. The PUD also found that after the initial interaction, system representative would often reach out to us again regarding general questions and support for other capacity issues.

One of the most requested areas for technical support was GPS and map training and assistance. Using an available GPS device systems were able to collect GPS coordinates for primary facilities such as meters, hydrants, valves, and blow offs. This information was immediately available for use with the free version of Google Earth. Systems would then use the reference points along with other system mapping information to place water mains on the map with color coding and labels to indicate size and type of water main. The map can easily be shared and updated as need. A sample of an individual system map produced during mapping technical assistance and used as part of the mapping workshop can be seen in Figure 11. Figure 12 provides an overview of some areas where mapping technical assistance was provided. The orange represents meters and the red represents hydrants. A larger image of each map can be found in Appendix 12.



Figure 11: Enterprise Terrace Water System Facilities Map



Figure 12: Overview of Mapping Assistance

Findings

Engagement strategies proved successful in capturing the attention and interest of system governing bodies and operators and helped build relationships and trust in the drinking water

community. One-on-one technical support also provided specific training for operators and helped resolve a variety of issues and deficiencies identified.

During the pilot the PUD interacted with 104 of 145 systems included in the program. Table 10 bellow shows the number of systems interacted with for each type of system.

Description	Total In	Systems Engaged	% of Group
	Pilot Group	With	
Community ¹	92	82	89%
TNC (i.e. School/Business) ²	40	18	45%
NTNC (Gas Station/Restaurant) ³	13	8	62%
Total ⁴	145	108	74%

Table 8: Number of Systems Engage With By Type of System

¹ Community Systems: Group A public water system with 15 or more services used by year-round residents for 180 or more days within a calendar year regardless of the number of people, or regularly servicing at least 25 year-round (more than 180 days) residents.

² Transient Non-Community Systems: A Group A public water system that serves (a) twenty-five or more different people each day for 60 or more days within a calendar years; or (b) twenty-five or more of the same people each day for 60 or more days, but less than 180 days within the calendar year.

³ Non-Transient Non-Community Systems: Group A public water system that provides service to 25 or more of the same non-residential people for 180 or more days within a calendar year.

⁴ The pilot program included systems <1,000 connections but did not engage with Federal, State or County water systems.

A summary of the interactions, based on the Technical Memorandums and Workshops, in each of the training and community engagement opportunity identified in Task 1.3 is shown in Table 11 and Table 12 below.

Tecl	hnical																				
Utility Assist/Sanitary Survey (T)	Planning General (T)	Planning Specific (T)	Mapping (T)	Engineering (T)	Design Approval (T)	Insurance (T)	WUE (T)	CCR (T)	Consolidation (T)	Intertie (T)	Maintenance & Operations (T)	Services Meters (T)	Cross Connection Control (T)	Operator Distribution (T)	Operator Treatment (T)	Operator Training (T)	Water Quality (T)	Chlorination (T)	Coliform Monitoring Plan (T)	Water Quantity (T)	Water Rights (T)
32	50	13	41	8	1	1	2	1	101	13	31	2	15	0	1	26	23	8	2	0	24

Table 9: Interactions in Technical Areas of Capacity

Table 10: Interactions in Managerial & Financial Areas of Capacity and Workshops

Managerial	Financial	Workshops	Total
· · · · · ·			

In many cases there were several interactions with one system in the same area. For example, it would require considerably more interactions with multiple representatives regarding the feasibility of consolidation compared to a single interaction needed to address a sanitary survey deficiency.

In other cases interactions required a significant time investment compared to others. For example, support with planning may have been broader in scope and depth compared to guidance in dealing with a positive coliform sample.

On several occasions the PUD worked with the ODW, at their request, to assess the need and urgency for technical support. Having the PUD available as a qualified local resource to assess the situation helped to better inform the ODW prior to their response.

Community Engagement

a) PUD No. 1 Public Meeting Presentations

The PUD Commissioner were provided with presentations to increase their understanding of drinking water capacity needs and opportunities for capacity development. The presentations are summarized below and the point presentations are included in the Appendices 12-16.

9/16/2016	- Pilot Program Introduction (Appendix 13)
3/14/2017	- Research and Database Findings (Appendix 14)
12/13/2017	- Water Supply Symposium (Appendix 16: See details below)
3/27/2018	- Mapping Assistance Example (Appendix 12: System Map/Regional View)
11/13/2018	- Pilot Program Findings (Appendix 15)

b) Water Supply Symposium Presentation

The Whatcom County Water Supply Symposium is a unique event that takes place every 3-5 years where the community comes together to collectively review and discuss the broad state of water supply in Whatcom County. The theme was "Our Water, Our Future, Our, Solutions" and presented water supply topics including: legal access to water, where our water comes from, how it is used, factors for the future, current strategies, actions for solving some of our challenges, and next steps in moving forward. Attendees included the PUD Commissioners, local and state legislators, community leaders, agriculture and industry leaders, and members of the community.

As part of the pilot program the PUD presented an overview of drinking water capacity issues and the challenges in Whatcom County. An overview of the TSP pilot was presented including how the Technical Support Program plays a role in building and maintaining capacity for future demand.

The power point slides can be found in Appendix 16 and the Drinking Water Supply presentation can be seen during the video time 28:40 – 41:30 on YouTube at <u>https://youtube/B30pAWcVkgk</u>.

c) WRIA I Planning Unit Hirst Decision and subsequent Hirst Fix ESSB 6091

Historically much of Whatcom County's rural development located outside public water system service areas has been able to access an apparent abundant supply of relatively shallow ground water for development of single family homes and small subdivisions through the use of permit exempt wells, in spite of the fact that most of Whatcom County is closed to new permitted withdrawals of water.

The Whatcom County Coordinated Water System Plan and county health code require new development to connect to public water systems, if the water system is willing and able to provide service. If the public system is unwilling or unable to provide service, there was a high likelihood that the developer could use a permit exempt the well.

The 2015 Washington State Supreme Court ruling known as the Hirst Decision determined that Whatcom County was responsible to determine if legal water was available for development and in response Whatcom County issued a moratorium on the use of permit exempt wells unless the applicant could demonstrate proposed source was not in hydraulic continuity with the waters of a closed basin.

In January 2018 the Washington State Legislature passed ESSB 6091 known as the Hirst Fix which reduced the maximum annual average daily withdrawal to 3,000 (1.095 Million Gallons Annually) and required that a plan be developed to mitigate the consumptive use for all new domestic permit exempt wells. This legislation allowed Whatcom County to lift the moratorium on the use of permit exempt the wells with title restrictions of 3,000 maximum annual average daily demand.

During the moratorium limiting the use of permit exempt the wells, public water systems became the focus of attention as a possible solution to the supply problem. However, it quickly became apparent to local leaders that rural water systems did not have adequate capacity to meet current and future demand inside most service areas let alone outside their service areas.

With the broadly held misconception that rural public water systems are the answer for future demand exposed, water system capacity has become a relevant and important issue for the broader community.

d) Coordinated Water System Plan Update called for by County Council

For decades, domestic water supply in Whatcom County has been served by public water systems and where public systems were not willing or able to serve, permit exempt wells were a likely alternative. However, a 2018 local legal dispute between a public water systems and an applicant regarding "Duty to Serve" and inherent "timely and reasonable" conditions of service, has once again called into questions the capacity of rural small water and future demand.

Under the Municipal Water Law, a water system has first right of refusal to supply water in its retail service area. The conditions of service are defined by each water system and as long as conditions of service are applied consistently to applicants in similar situations, there is no opportunity for dispute beyond the local governing body other than in Superior Court.

The local dispute highlights the potential for water systems to overly burden an applicant with the upfront cost of extending the distribution system for the benefit of others even though it may be hugely disproportionate to the needs of the applicant, ultimately leaving the applicant no alternative but to accept the terms of the water system or cancel their development plans.

Whatcom County is proposing to limit the water systems conditions of service and has asked the Water Utility Coordinating Committee (WUCC) to propose recommendations to address the issue through the CWSP in lieu of Whatcom County doing so directly in the health code and building code. Such limitations would fundamentally change the way water systems plan for and develop capacity for current and future development. Should the county adopt limitations on condition of service, water systems would most likely reduce their retail service areas and potentially their overall service area to comply with planning requirements and Municipal Water Law "Duty to Serve" implications.

Summary and Conclusions

The Washington State Department of Health is committed to the strategic development of Foundational Public Health. The Office of Drinking Water (ODW) mission is to "Work with others to protect the health of the people of Washington State by ensuring safe and reliable drinking water" which is a cornerstone of Foundational Public Health.

The ODW framework of rules and programs rely on prevention as the first line of defense, with a goal of avoiding potentially health threatening and costly problems. Regular inspections, technical assistance programs, planning programs, training, and keeping customers informed all support the ODW mission. The ODW has a lot of useful resources, knowledgeable staff, and many tools to be successful, however they simply do not have the time and manpower to address all the needs are not positioned with the local presence and engagement.

It is each water systems responsibility to develop and maintain the technical, managerial, and financial capacity necessary to ensure it can provide safe and reliable drinking water now and into the future. Ultimately, public water systems and their water works operators are the community's first line of defense against contaminants getting into our public water supply and people getting sick.

When a water system no longer has adequate capacity to ensure safe, reliable drinking water, the burden ultimately falls to the County as the "purveyor of last resort", which is certainly more challenging and more costly for all parties involved. It is therefore in the best interest of the drinking water community for the ODW, Counties, PUD's, Satellite Management Agencies and water systems to work together to ensure that all water systems have the support they need to develop and sustain the technical, managerial, and financial capacity necessary to provide safe, reliable, drinking water.

Whatcom County is facing many drinking water supply challenges to water quality and quantity in a basin where new appropriation of water rights is unlikely, and the future of permit exempt wells is in question. Rural water systems are often seen as the primary source of drinking water for future demand but this may not be the case as water systems struggle with the challenges of developing and maintaining capacity.

The community needs to be cognizant of small water systems capacity needs in order to set pragmatic goals and strategies to bridge the gap. The Technical Support Program pilot provided local agencies and community leaders with a better understanding of local drinking water supply needs and challenges and highlights the importance and need for ongoing local support of water system capacity development and maintenance.

The three factors most important for developing and maintaining water system capacity are: An Engaged Governing Body; Qualified Certified Operators; Adequate Infrastructure.

Engaged Governing Body: Most systems, large and small, are struggling to attract and retain engaged governing body members that are willing to invest the time required to understand their systems capacity needs and make the critical and difficult decisions necessary to ensure sustainability, such as raising rates that impact them and their neighbors.

Group training was provided to governing body members highlighting important issues of concern such as risk management, the importance of budgeting for major repairs, and performing system maintenance. Those governing bodies willing to do the work, but lacking the necessary skills were provided with oneon-one technical support in areas of organizational and operational planning. In some cases, systems were introduced to governance options that included reorganization and consolidation. **Qualified Certified Operators:** Many small systems rely on legacy, grandfathered water operators that are retiring over the next several years, with very few qualified contract operators available to fill the gap. Retiring operators take with them vital institutional knowledge and they are often the glue that hold otherwise dysfunctional organizations together.

Workshops were held to provide governing bodies and operators with information and tools to help them pass on their knowledge such as basic infrastructure mapping and documenting procedures. Where a new or replacement system operator was needed, systems were connected with local contract operators or SMA's (Satellite Management Agencies).

Adequate Infrastructure: The PUD observed the mounting financial and operational impacts of aging infrastructure on water systems that are struggling to keep up with day to day repairs. Some systems feel helpless in addressing their long-term capital facility needs. Many small systems don't even recognize the importance of investing in capital maintenance and replacement and only a handful are saving towards this inevitable challenge. In some cases the PUD found systems overwhelmed by failing infrastructure, even to the brink of receivership if they do not take affirmative action soon.

Assistance was provided to one system facing E.coli directly associated with an aging underground reservoir. Technical support explored short term and long-term options to address the aging infrastructure challenge including consolidation with a neighboring systems. A second system facing structural failure of their storage tank was provided with technical support including short term reconfiguration of the system to bypass the storage tank with emergency disinfection while the storage tank was taken offline for renovation. This system was encouraged to consider long-term capital planning including possible connection for wholesale supply with an adjacent system. In both cases the governing body was supported by local expertise to identify an interim plan while long-term capital repairs, replacement, and planning are explored.

During the pilot the PUD concluded that small water systems are on one of three paths: Sustainable, Transitional, or Declining. Figure 13 below illustrates the drinking water history, the progression of small water systems in Whatcom County, and the challenges facing system that lead us to a conclusion.

Sustainable: About one third of water systems, typically larger systems, are actively engaged in doing the work needed and have the knowledge, tools, and resources to ensure they can provide safe and reliable drinking water into the future. These systems benefit from ongoing technical support but they are generally larger, self-sufficient, and self-motivated. These systems may be able to help support those with a capacity deficiency.

Transitional: About one third of systems face significant challenges but with some motivation and assistance they will respond in a positive direction. Many of these systems face operational deficiencies such as implementation of disinfection or programmatic deficiencies such as development and implementation of a cross connection control program. Other systems face more systemic challenges like retaining a governing body that is willing to plan for facility replacement and assess water rates necessary to support long term plans. Systems willing to engage in progressive capacity development and maintenance with access to technical support will generally move towards sustainability.

Declining: The remaining systems generally find themselves in decline because they simply don't have the awareness or motivation needed to move in a positive direction. These systems are typically smaller and often unaware or in denial of the need to engage in capacity development and maintenance. Some systems struggle to maintain day to day technical or financial capacity while others are so overwhelmed by larger issues like a shortage of supply or a Nitrate

contaminated source that they simply give up or pretend the problem does not exist. Small systems don't have economies of scale to draw upon for governance or financial resources. It is critical to stem the decline of these systems to prevent more serious issues from developing and support them towards a path of sustainability. Without technical support these systems are more likely to fail, ultimately falling to the purveyor of last resort.

The Technical Support Program (TSP) pilot program inherently focused on assessing which path a small water systems was on, identifying areas of capacity development or maintenance needed, and then providing technical support in those areas of need to move the systems in a positive direction. The reality is that capacity development and maintenance is not something that can be address through a short term program or one time project fix. Capacity development and maintenance is long-term endeavor towards perpetual drinking water sustainability.

The TSP pilot demonstrated that capable and willing PUD's can be an effective partner towards building technical, managerial, and financial capacity in the community. Building and maintaining trusted relationships in the drinking water community is the key to understanding and acting on local opportunities for improving water system capacity.

Consistent with its core values, the PUD is committed to the ongoing process of building trust and confidence in the community and fostering an environment of water system capacity development. Realistically to sustain the TSP the PUD will need funding partners such as the ODW and local agencies like Whatcom County to successfully continue the program.



Figure 13: Drinking Water History, Progression of Small Water Systems, and Challenges

Next Steps

The PUD is committed to working with the local drinking water community in support of water system capacity development and maintenance. The PUD welcomes the opportunity to "partner" with the ODW in this vital drinking water program that supports local small water purveyors and their mission to provide safe, reliable, sustainable drinking water to the local community.

During 2019 the PUD and the ODW will share its experience and present the TSP pilot findings to the PUD Commissioners, the Whatcom County Executive, the Washington Public Utility District Association (WPUDA), and others interested in exploring the potential for a local Technical Support Program model in their community.

There is need for funding to continue development of this technical support program in Whatcom County and in other communities where PUD's are willing and able to support their drinking water community. PUD No. 1 of Whatcom County is proposing a jointly funded program with the State ODW and WCHD in the amount of \$70,000 (\$35,000 each) per year to sustain a scaled down Technical Support Program that would ensure that the progress to date is not lost and the good work started continues. The program would continue to be facilitated by the PUD in much the same manner as the TSP pilot with continued emphasis on: group training, one-on-one technical support, and regional supply issues impacting water systems.

Going forward it is important for the drinking water community to:

- Recognize existing water system limitations
- Encourage water system capacity development
- Continue developing Technical Support Programs
- Better understand potable water supply challenges
- Reconcile water availability with land use projections
- Foster dialogue among systems and with local governments
- Strengthen regional supply through interties and consolidation

References

Department of Ecology, State of Washington, Water Resources Explorer 2014 Revised Code of Washington (RCW) Title 54 "Public Utility Districts" Revised Code of Washington (RCW) Title 57 "Water-Sewer Districts" Washington State Department of Health, Office of Drinking Water "Sentry Data Base" Washington State Department of Health, Office of Drinking Water "Website" Washington Administrative Code Chapters 249-290 "Group A public water systems" Whatcom County Coordinated Water System Plan Update (August 2016)

Appendices

Index of Appendices

- Appendix 1 ODW Whatcom County Planning Landscape
- Appendix 2 ODW Capacity Assessment Survey: Whatcom
- Appendix 3 ODW Sanitary Survey Capacity Summary
- Appendix 4 Technical Support Program Survey Questions and Responses
- Appendix 5 System Chlorination Requirements CT6
- Appendix 6 Missing Chlorination Reports
- Appendix 7 Operating Permit Status
- Appendix 8 Sample Exceedances: Nitrate, Lead & Copper, Coliform
- Appendix 9 Survey of Small Whatcom County Systems (Sample)
- Appendix 10 Water Rights: Understanding and Management (PPT)
- Appendix 11a Water System Risk Management: Liability, Insurance (PPT)
- Appendix 11b Water System Risk Management: Hydrants (PPT)
- Appendix 12a Mapping: Enterprise Terrace System Map
- Appendix 12b Mapping: Regional Overview Map
- Appendix 13 Pilot Program Introduction Presentation (PPT)
- Appendix 14 Pilot Program Research and Database Findings Presentation (PPT)
- Appendix 15 Pilot Program Project Conclusion Presentation (PPT)
- Appendix 16 Water Supply Symposium Presentation (PPT)
- Appendix 17a Technical Assistance Memorandum (Template)
- Appendix 17b Technical Assistance Memorandum: Supplemental Activity Log (Template)
- Appendix 18 Technical Assistance Memorandum Summary
- Appendix 19 PUD Technical Support Pilot Program Press Release

This Page Left Intentionally Blank

Appendix 1

ODW Whatcom County Planning Landscape

PWS ID	KING	WS Name	Max Total Pop	Plan Approval History	Pre-Plan Date	Last Plan Submittal Date	Last Plan Approval Date	Approved Design Capacity	Total Conn	Specific Project Name	Specific Project Comments	Permit Color
5600	WHATC OM	BELLINGHAM-WATER DIVISION, CITY OF	80000	2013 2009 1993			12/4/2013	0	24295	2009 WATER SYSTEM PLAN	This is a completely revised WSP prepared by new engineer, which	Green
49150	WHATC OM	LYNDEN WATER DEPARTMENT	12392	2009 2000	8/28/2014		12/15/2009	0	5409	COMPREHENSIVE WATER SYSTEM PLAN - DRAFT	Updated WSP approved on 12/15/2009. System capacity	Green
24850	WHATC OM	FERNDALE	11080	2010	10/27/2015		4/30/2010	0	4984	WATER SYSTEM PLAN		Green
95910	WHATC OM	LWWSD - SOUTH SHORE WATER SYSTEM	9870	2011 2009 2002 1992			3/15/2011	0	3667	COMPREHENSIVE WATER SYSTEM PLAN	plan received on 9/15/09. could not enter until water rights	Green
95904	WHATC OM	BIRCH BAY WATER & SEWER DISTRICT	9431	2009 2003 1992	3/10/2015		12/15/2009	0	6050	WATER SYSTEM PLAN - 2008	Revised WSP approved on 12/15/2009 with 'unspecified'	Green
07300	WHATC OM	BLAINE, CITY OF	6305	2010 1996			3/30/2010	0	2435	COMPREHENSIVE WATER SYSTEM PLAN	The draft WSP was fairly comprehensive, but was way	Green
24200	WHATC OM	EVERSON, CITY OF	2470	2013 2003	11/22/2011	11/15/2012	4/26/2013	0	789	WATER SYSTEM PLAN - 2003	This water system serves the City of Everson as well as the Everson,	Green
66110	WHATC OM	Columbia Valley Water District	2258	2013 2004		6/1/2012	4/29/2013	1423	1357	WATER SYSTEM PLAN - 2004	System is currently approved for 328 recreational and 1095	Green
59800	WHATC OM	NOOKSACK WATER DEPT	2022	2012 2006		6/4/2012	2 12/12/2012	2 0	462	WATER SYSTEM PLAN - 2004	System's physical capacity was changed to "Unspecified" for	Green
28050	WHATC OM	GLENHAVEN LAKES CLUB	1724					909	727			Green
84870	WHATC OM	SUMAS WATER DEPT	1621	2012 2000			3/26/2012	2 0	622	WATER SYSTEM PLAN	Final WSP is in big book file. Wellhead protection plan	Green
95750	WHATC OM	POINT ROBERTS WATER DISTRICT NO 4	1590	2008 2001a 1999			7/28/2008	2953	2036	2008 - WATER SYSTEM PLAN	Final WSP demonstrates that existing 2.5 MG Churchill storage	Green
68350	WHATC OM	POLE ROAD WATER ASSOCIATION	1545	2007a 2005			10/11/2007	996	598	WATER SYSTEM PLAN AMENDMENT	This WSP Amendment summarizes the status of this	Green
76105	WHATC OM	SANDY POINT IMPROVEMENT CO	1467	2012 2006 2000			1/31/2012	2 762	754	Water system plan		Green
95900	WHATC OM	WHATCOM COUNTY WATER DIST NO 7	1405	2009 1998	6/2/2008		1/5/2009	1145	660	2008 WATER SYSTEM PLAN	Plan outlines some significant improvements to reconfigure the	Green
95700	WHATC OM	WHATCOM COUNTY WATER DIST NO 2	1348	2010 2003	6/2/2008		4/30/2010	821	564	WATER SYSTEM PLAN		Green
59850	WHATC OM	NOOKSACK VALLEY WATER ASSOCIATION	1340					356	315			Green
18418	WHATC OM	DEER CREEK WATER ASSOCIATION	1130	2011 2005a 2003a 1997			2/7/2011	. 643	472	WATER SYSTEM PLAN AMENDMENT	WSP amendment outlined alternatives for fully	Green
95914	WHATC OM	WHATCOM COUNTY WATER DIST 13	795	2005	5/26/2010		3/11/2005	1338	347	WATER SYSTEM PLAN - 2005	WSP demonstrates that system has capacity to serve 1338 ERUs,	Green

PWS ID	KING	WS Name	Max Total Pop	Plan Approval History	Pre-Plan Date	Last Plan Submittal Date	Last Plan Approval Date	Approved Design Capacity	Total Conn	Specific Project Name	Specific Project Comments	Permit Color
84850	WHATC OM	SUMAS RURAL WATER ASSOCIATION	612	2009		2/4/2009		208	186	SMALL WATER SYSTEM MANAGEMENT PLAN	Review comments sent 6/10/09. Water system analysis must be	Green
00250	WHATC OM	ACME WATER DISTRICT NO 18	568					231	98			Green
95915	WHATC OM	GLACIER WATER DISTRICT	562					1165	877			Green
63350	WHATC OM	OLD SETTLERS WATER ASSOCIATION	540	1999			10/4/1999	209	202	1999 WATER SYSTEM PLAN	WSP approval included as-built system approved for 181	Green
18800	WHATC OM	DEMING WATER ASSOCIATION	501	2002			11/27/2002	89	89	SMALL WATER SYSTEM PLAN	Small WSP Plan included preliminary design for source and	Green
56500	WHATC OM	MOUNT BAKER WATER ASSOCIATION	500					217	211			Green
29014	WHATC OM	LOUIE, JOE WATER ASSOCIATION	471	2000			11/9/2000	232	180	SMALL WATER SYSTEM MANAGEMENT PLAN	SWSMP required as condition for DWSRF loan application #2000-	Green
53250	WHATC OM	MEADOWBROOK WATER ASSOCIATION	440	2007	10/14/2011		5/14/2007	141	141	WATER SYSTEM PLAN - 2003	Executive summary and letter from engineer addressed	Green
18750	WHATC OM	DELTA WATER ASSOCIATION	420	2012	8/18/2011		2/29/2012	174	159			Green
62000	WHATC OM	NORTHWEST WATER ASSOCIATION, INC	400	2005			6/9/2005	190	129	SMALL WATER SYSTEM MANAGEMENT PROGRAM	SWSMP describes existing system as well as improvements needed	Green
79800	WHATC OM	SKOOKUM CHUCK WATER ASSOCIATION	375					142	127			Green
17050	WHATC OM	CUSTER WATER ASSOCIATION	365	2004			4/27/2004	315	217	WATER SYSTEM PLAN - 2004	System approved for 310 residential connections plus 5	Green
05450	WHATC OM	BELL BAY JACKSON WATER ASSOCIATION	350	2002			1/28/2002	200	177	2001 WATER SYSTEM PLAN	Small Water System Plan. System approved for 200	Green
59250	WHATC OM	NEWHALEM WATER SYSTEM	308					600	46			Green
43290	WHATC OM	LISECC	297	2008			12/8/2008	210	199	SMALL WATER SYSTEM MANAGEMENT PROGRAM	The SWSMP indicates that system can support more than	Green
12150	WHATC OM	CENTRAL CITY WATER ASSOCIATION	285	1999			4/26/1999	125	114	1999 WATER SYSTEM PLAN	Water System Plan covers operations and information for	Green
27631	WHATC OM	RASPBERRY RIDGE WATER ASSOCIATION	278					74	70			Green
67020	WHATC OM	PERCIE ROAD WATER ASSOCIATION	250	2008			12/8/2008	110	107	SMALL WATER SYSTEM MANAGEMENT PROGRAM	SWSMP submitted per requirements of SRF application	Green
05875	WHATC OM	BERTHUSEN ROAD WATER ASSOCIATION	250					115	99			Green

PWS ID	KING	WS Name	Max Total Pop	Plan Approval History	Pre-Plan Date	Last Plan Submittal Date	Last Plan Approval Date	Approved Design Capacity	Total Conn	Specific Project Name	Specific Project Comments	Permit Color
99550	WHATC OM	Y-SQUALICUM WATER ASSN	250	2015		2/8/2013	2/4/2015	5 70	70			Green
30200	WHATC OM	GUIDE MERIDIAN WATER ASSOCIATION	245					84	80			Green
71290	WHATC OM	RATHBONE PARK WATER ASSOC	240	2012, 2002			2/29/2012	65	65	SMALL WATER SYSTEM MANAGEMENT PLAN	Agreed Order/SRF app.	Green
32350	WHATC OM	HEMMI ROAD WATER ASSOCIATION	236	2010 2009 2000			2/2/2010	256	181	WATER SYSTEM PLAN UPDATE 2009		Green
05370	WHATC OM	BELFERN WATER ASSOCIATION	219	1997			1/14/1997	76	74	1996 WATER SYSTEM PLAN		Green
AB912	WHATC OM	Deer Creek Water Assn/Guide South	200					0	86			Green
58950	WHATC OM	NEPTUNE BEACH WATER ASSOC	200					0	81			Blue
66116	WHATC OM	PARADISE PARK WATER SYSTEM	200					53	53			Green
51100	WHATC OM	MAPLE FALLS WATER COOP	194	2005			8/11/2005	5 188	90	SMALL WATER SYSTEM MANAGEMENT PLAN	Based on water system analysis included in SWSMP, this system	Green
52957	WHATC OM	LWWSD - AGATE HEIGHTS	189	2011			3/15/2011	48	36			Green
56900	WHATC OM	MOUNTAIN VIEW WATER ASSOCIATION	186					95	75			Green
23480	WHATC OM	ENTERPRISE ESTATES WATER ASSOC.	184					45	45			Green
24151	WHATC OM	EVERGREEN MOBILE PARK & SALES	180					0	60			Blue
97110	WHATC OM	WILLEYS LAKE TERRACE WATER ASSN	180					44	44			Green
86200	WHATC OM	SUNSET WATER ASSOCIATION	174					106	78			Green
08118	WHATC OM	LWWSD - EAGLERIDGE	169	2011			3/15/2011	69	65			Green
92150	WHATC OM	WAHL WATER ASSOC	165					58	68			Blue
64150	WHATC OM	ORCHARD WATER ASSOC	153					59	51			Green
73750	WHATC OM	ROEDERLAND WATER ASSOCIATION	150					0	51			Blue

PWS ID	KING	WS Name	Max Total Pop	Plan Approval History	Pre-Plan Date	Last Plan Submittal Date	Last Plan Approval Date	Approved Design Capacity	Total Conn	Specific Project Name	Specific Project Comments	Permit Color
61350	WHATC OM	NORTH STAR WATER ASSOC	140					20	57			Blue
33364	WHATC OM	HILLTOP WATER OWNERS ASSOCIATION	135	2004			1/28/2004	0	55	WATER SYSTEM PLAN - 2005	Proposed improvements to obtain asbuilt system approval	Blue
24195	WHATC OM	EVERSON WATER ASSOC	130			11/15/2012		66	55			Green
44950	WHATC OM	LAKE TERRILL WATER ASSOC	125					82	47			Green
91000	WHATC OM	VALLEY VIEW WATER ASSOC	120					81	77			Green
36268	WHATC OM	ISLE AIRE BEACH ASSOCIATION	120					66	64			Green
01200	WHATC OM	ALDERGROVE WATER ASSOCIATION	120					120	60			Green
50900	WHATC OM	MANTHEYS COUNTRY MOBILE PARK	120					0	58			Blue
12112	WHATC OM	CEDAR LYNN WATER ASSOC	116					0	33			Blue
44540	WHATC OM	LAKE SAMISH TERRACE PARK	115					65	65			Green
00601	WHATC OM	CENTURY WATER ASSOCIATION	110					37	30			Green
87120	WHATC OM	TALL CEDARS ESTATES WATER ASSOC.	100					0	44			Blue
96700	WHATC OM	WICKERSHAM WATER ASSOCIATION	98					0	32			Blue
23485	WHATC OM	ENTERPRISE TERRACE WATER ASSN.	95					32	32			Green
56874	WHATC OM	MOUNT BAKER MOBILE HOME PARK	87					0	35			Blue
24840	WHATC OM	FERNDALE MOBILE VILLAGE	85					0	54			Blue
25610	WHATC OM	FLEMINGS PLATT WATER ASSOCIATION	84					0	30			Blue
19200	WHATC OM	DIABLO WTR SYS-SEATTLE CITY LIGHT	80					65	47			Green
27450	WHATC OM	GEORGIA MANOR WATER ASSOC	76			11/29/2012		0	29			Blue

PWS ID	KING	WS Name	Max Total Pop	Plan Approval History	Pre-Plan Date	Last Plan Submittal Date	Last Plan Approval Date	Approved Design Capacity	Total Conn	Specific Project Name	Specific Project Comments	Permit Color
80550	WHATC OM	SMITH ROAD WATER ASSOCIATION	75					0	32			Red
01383	WHATC OM	CHUCKANUT TRAILS WATER	72		11/22/2011			53	51			Green
67900	WHATC OM	PLEASANT VALLEY WATER SYSTEM	68					29	29			Green
02601	WHATC OM	FAIRFIELD MHP	66					25	22			Green
88050	WHATC OM	THORNTON WATER ASSOCIATION	65					26	17			Green
00119	WHATC OM	KONTREE APARTMENTS WATER SYSTEM	60					0	36			Blue
74705	WHATC OM	ROYAL COACHMAN MOBIL EST	60					33	29			Green
09899	WHATC OM	BELFERN WEST	60					25	24			Green
19890	WHATC OM	DOUBLE L MOBILE HOME PARK	58					0	25			Blue
07507	WHATC OM	NORTHWEST MOBILE HOME PARK	55					0	36			Blue
27950	WHATC OM	GLEN COVE WATER CORPORATION	55					31	21			Green
30800	WHATC OM	HAMPTON WATER ASSOCIATION	54					0	21			Blue
02153	WHATC OM	VICENTE FARMS & SONS- MISSION	53					0	13			Blue
15510	WHATC OM	COUNTRY HAVEN WATER ASSOC	50					0	20			Blue
62135	WHATC OM	NORTHWOOD PARK SYSTEM	50	2012	10/14/2011		2/29/2012	0	18	SWSMP	for SRF App.	Blue
62150	WHATC OM	NORTHWOOD WATER ASSOCIATION	49	2012, 2008	10/14/2011		2/29/2012	17	17	SMALL WATER SYSTEM MANGEMENT PROGRAM	Update of previous - for SRF app.	Green
27755	WHATC OM	GLACIER SPRINGS WATER SYSTEM	46					273	102			Green
56831		VICENTE FARMS & SONS ENTERPRISE	46					10	10			Green
37950	WHATC OM	KELLY ROAD WATER ASSOCIATION	45					12	18			Blue

PWS ID	KING	WS Name	Max Total Pop	Plan Approval History	Pre-Plan Date	Last Plan Submittal Date	Last Plan Approval Date	Approved Design Capacity	Total Conn	Specific Project Name	Specific Project Comments	Permit Color
72800	WHATC OM	RIVER RD WATER ASSOCIATION	45					20	17			Green
48875	WHATC OM	LUMMI POINT WATER ASSOCIATION	45					17	15			Green
46300	WHATC OM	LAUREL WEST WATER ASSOCIATION	45					0	11			Blue
91650	WHATC OM	VICTOR WATER ASSOCIATION	43					15	22			Blue
06514	WHATC OM	SUNSET WATER & MAINTENANCE ASSOC	42					28	16			Green
00496	WHATC OM	AGATE BAY TRAILER PARK	40	2013		1/4/2007	5/8/2013	³ 0	25	SMALL WATER SYSTEM MANAGEMENT PLAN	Submittal included a SWSMP with water system analysis for	Blue
02300	WHATC OM	ANDERSON CREEK WATER ASSOCIATION	40					0	15			Blue
24717	WHATC OM	FAZON ROAD WATER ASSOC IATION	40					0	15			Blue
04050	WHATC OM	BAKER VIEW WATER ASSOC	40					0	13			Blue
02011	WHATC OM	CALMAN JAMES L.	40					15	13			Green
24164	WHATC OM	EVERGREEN RETREAT MHP	39					17	17			Red
03338	WHATC OM	SNO PUD 1-PILCHUCK 10	32	2011			8/10/2011	. 11	10			Green
10562	WHATC OM	CALMOR COVE CLUB	29					0	49			Blue
28950	WHATC OM	GRANDVIEW BEACH WATER ASSOC INC	28					17	15			Green
44593	WHATC OM	LAKE TERRELL MOBILE RANCH WATER SY	27					9	18			Blue
21337	WHATC OM	OLD GUIDE WATER ASSOCIATION	26					0	13			Blue
												Green

Appendix 2

ODW Capacity Assessment Survey: Whatcom

About target group:	About who responded:
Comm. systems with 100-1,000 connections	
Total: 562	Total: 16
Ownership Type	Ownership Type
48% Public	38% Public
18% Private for profit	6% Private for profit
35% Private non-profit	56% Private not for profit
Size	Size
43% 100-200 connections	25% 100-200 connections
35% 201-500 connections	31% 201-500 connections
22% 501-1000 connections	44% 501-1000 connections
Region	Region
33% Eastern	34% Eastern
37% Northwest	38% Northwest
30% Southwest	28% Southwest

1. Are you the owner of the system?

69% Yes **31%** No

If no, did you review these questions with the owner before answering the survey?

60% Yes **40%** No

2. Please rate how strongly you agree with each of the following statements about your system's

My system has adequate technical capacity.

- **6%** 1 Strongly disagree
- **0%** 2 Disagree
- **0%** 3 Neither agree nor disagree
- **25%** 4 Agree
- **69%** 5 Strongly agree

My system has adequate managerial capacity.

- **6%** 1 Strongly disagree
- 0% 2 Disagree
- **0%** 3 Neither agree nor disagree
- **31%** 4 Agree
- 63% 5 Strongly agree

My system has adequate financial capacity.

- 6% 1 Strongly disagree
 0% 2 Disagree
 6% 3 Neither agree nor disagree
 44% 4 Agree
 44% 5 Strongly agree
- 3. How many people have served in the lead operator position in the past 10 years?

50% 150% 2 to 30% 4 or more

4. Do you have a complete Water System Plan (WSP) or Small Water System Management Program (SWSMP) that is actively used to operate and manage your water system?

Yes - We have a complete WSP or SWSMP that is used to manage and operate our **88%** system.

13% No - We have started a WSP or SWSMP, but it is not complete.

No - We have not done any planning, or our planning documents are no longer **0%** useful.

If you said, "No - We have started a WSP or SWSMP, but it is not complete." please answer the following:

Do you have complete, current, and useful plans or programs in the following four areas?

Yes	No
50%	50% Operations & maintenance
100%	0% Component inventory and up to date distribution system map
100%	0% Wellhead protection/source water protection
0%	100% Emergency response

5. Do you own a generator with capacity to power your system and supply water to all your customers during a power outage?

63% Yes

No - But we have an emergency intertie that can supply customers with basic water **13%** service for at least 24 hours without the need for any pumping.

- No But we have gravity storage that can supply customers with basic water service **25%** for at least 24 hours without the need for any pumping.
- **0%** No
- 6. Is your system willing to consider connecting to a nearby water system, forming a
 - **13%** There is not another system near our system.
 - 19% Yes We would consider consolidating with a nearby system.
 - 31% Maybe We would need to understand the potential costs and benefits first.
 - **13%** No We are not willing to consolidate with a nearby system.

No - We are not willing to consolidate with a nearby system, but we would consider **25%** an intertie with another system.

- 7. Is your system willing to consider transferring ownership, management, and operations to
 - **0%** Yes We would consider transferring ownership of our system to another utility.
 - 0% Maybe We would need to understand the potential costs and benefits first.
 - No But we would consider an agreement for operations and management by a
 - **13%** Satellite Management Agency.
 - 88% No We are not willing to transfer ownership of our system to another utility.
- 8. Do you prepare a budget each year?
 - **100%** Yes **0%** No
- 9. For last calendar year, did your system generate enough money to cover all system costs?

100% Yes - We broke even or had a surplus last year.0% No - We had to borrow money or cut expenses.

- 10. What is the average monthly rate charged to your single-family residential customers?
 - 19% Less than \$20.00
 31% \$20.01-\$30.00
 44% \$30.01-\$40.00
 6% \$40.01-\$60.00
 0% \$60.01-\$80.00
 0% Greater than \$80.00
- 11. How many times has the water system's rate been increased in the past 10 years?
 - 13% 0
 50% 1 to 2
 19% 3 to 4
 19% 5 or more
- 12. Which of the following best describes the rate structure you use?
 - 6% Flat rate based on unmetered consumption
 - 6% Declining block
 - **31%** Uniform block
 - **50%** Inclining block
 - **6%** Seasonal (combined with another rate structure)
- 13. How often do you compare operating expenses with operating revenue?
 - 31% Monthly
 - 19% Quarterly
 - **31%** Regularly (but not on a set schedule)
 - **0%** Semi-annually
 - 19% Annually
 - **0%** Rarely or Never
- 14. Do you have enough in savings or reserves to cover all of the following?
 - Operating cash reserve
 - Emergency reserve
 - Short-lived asset replacement reserve

0% No - we don't have enough to fund ANY of these reserves.

6% No - we have enough to fund ONE of these reserves.

19% No - we have enough to fund TWO of these reserves.

75% Yes - we have enough to fund ALL of these reserves.

15. Do you have a plan to make capital improvements (such as replace water mains, construct/rehabilitate a well, or construct/rehabilitate a reservoir) in the next 6 years?

63% Yes

No - we assessed our facilities and no improvements are needed in the next 6-year **38%** period.

No - we assessed our facilities and need to make improvements, but have no plans to **0%** do so in the next 6-year period.

0% No - we have not assessed our facilities.

16. Which source would likely contribute the most funds to complete future capital improvements? (please answer regardless of whether you have a plan to make improvements)

56% Water System Funds (example: savings or reserves)

13% Line of Credit/Private Loan (example: bank loan)

25% Government Loan (example: State Revolving Loan Fund)

6% Government Grant (example: Community Development Block Grant)

17. Our staff and programs are here to help you build your system's capacity.

Which areas are you or your system interested in? Check all that apply.

Total percentage exceeds 100% because respondents could choose more than one answer.

- 6% Completing a State Revolving Loan Fund application
- **6%** Budgeting and rate setting
- 6% Planning for infrastructure replacement
- **0%** Assistance to consolidate or restructure (transfer ownership)
- **0%** Board training
- **88%** I am not interested in assistance.
- **1%** Other:

If you are interested in assistance (such as a phone call or workshop), when is the best time for you to receive assistance? Check all that apply.

*Percentages are calculated for the 187 people who indicated they were interested in assistance. Total percentage exceeds 100% because respondents could choose more than one answer.

1% Daytime0% Evening0% Saturday

Appendix 3

ODW Sanitary Survey Capacity Summary

Cross Check Number = A-Z DISMA DISM	SystemName	Permit	Intertie Options	DS/WDM Operator	WTPO Operator	SWSMP Prepare/Update	Coli Monitoring Plan	Chlorine Samples/Reports	Cross Connection Control Plan	O&M Manual	Component Inv & Ass	WUE/Loss Control	System Appr/Dsgn/Anal	As-Built/Record Drawings	System/Controls Schematic	Distribution Mapping	Well Head Protection Plan	Flushing Program	Source Water Meter	Source Inverted Vent/Screen	Source Raw Water Sample Tap	Decomission Old Well	Tank Hatch Inspect/Pictures	Tank Hatch Seal R/R	Tank Overflow Screening R/R	Screening Other	Service Meters	Compressor: Oil-less/FG/Sep	Hydrant Maintenance Program	Valve Exercising Program	ASME PRV	Other O&M Notes
1 00250	ACME WATER DISTRICT NO 18	Green																													\square	<u> </u>
2 00496		Green																														<u> </u>
3 01200		Green							х														Х								x	
4 18237		Green			x	x																									┝──┦	x
5 02300		Biue																													\vdash	
6 01109		Green						x											x													X
7 04030 8 06430		Groop				x				~														x	x						\vdash	X
8 00429 9 05370		Green			ŕ	<u> </u>	^	~		^																						^
10 00800	BELEERN WEST	Green						^																								v
11 05450	BELL BAY JACKSON WATER ASSOCIATION	Green				x	-	_												_			x								 	^
12 05600	BELLINGHAM-WATER DIVISION, CITY OF	Green																					~									
13 05875	BERTHUSEN ROAD WATER ASSOCIATION	Green				x		x																								-
14 02395	BIRCH BAY SQUARE WATER OPERATION	Green			ľ	-		x									х						х									х
15 95904	BIRCH BAY WATER & SEWER DISTRICT	Green						_																								
16 07227	BLACK MOUNTAIN RANCH	Green																														-
17 07300	BLAINE, CITY OF	Green					:	х																								-
18 59379	BLUE MOUNTAIN GRILL WATER SYSTEM	Blue			2	x i	x						х				х		х													
19 AB395	BOXX BERRY FARM WATER SYSTEM	Green			2	x :	x																									
20 02011	CALMAN JAMES L.	Green			x	x :	x	х																								х
21 10562	CALMOR COVE CLUB	Blue																														
22 12641	CAMP LUTHERWOOD	Green																														
23 12112	CEDAR LYNN WATER ASSOC	Blue					1	х									х															х
24 12150	CENTRAL CITY WATER ASSOCIATION	Green					1	х																								
25 00601	CENTURY WATER ASSOCIATION	Green						х																								х
26 01383	CHUCKANUT TRAILS WATER SYSTEM	Green			1	x																			х							х
27 NP120	COLONIAL CREEK CAMPGROUND	Green					2	х																								
28 66110	COLUMBIA VALLEY WATER DISTRICT #19	Green					2	х																								
29 AA460	CORNERSTONE CHRISTIAN SCHOOL W.S.	Green			2	x																										
30 AA553	CORNERSTONE COMMUNITY CHURCH	Green																														
31 07028	CORNWALL CHURCH OF GOD W.S.	Green			2	x	2	х													х					х						<u> </u>
32 15510	COUNTRY HAVEN WATER ASSOC	Blue				2	x	х				x									х											х
33 15596	COVENANT CHRISTIAN SCHOOL	Green																														
34 17050	CUSTER WATER ASSOCIATION	Green																														
35 AC765	DAKOTA CREEK GOLF CLUB WATER SYSTEM	Blue			1	x								х					х				х									х
36 AB912	DEER CREEK WATER ASSN/GUIDE SOUTH	Green					2	x																								
3/ 18418	DEER CREEK WATER ASSOCIATION	Green	х																													
38 08255	DELTA GROCERY WATER SYSTEM	Green			1	X														x					X	X						

Cross Check Number = A-Z DISMd DISMd	SystemName	Permit	Intertie Options	DS/WDM Operator	WTPO Operator	SWSMP Prepare/Update	Coli Monitoring Plan	Chlorine Samples/Reports	Cross Connection Control Plan	O&M Manual	Component Inv & Ass	WUE/Loss Control	System Appr/Dsgn/Anal	As-Built/Record Drawings	System/Controls Schematic	Distribution Mapping	Well Head Protection Plan	Flushing Program	Source Water Meter	Source Inverted Vent/Screen	Source Raw Water Sample Tap	Decomission Old Well	Tank Hatch Inspect/Pictures	Tank Hatch Seal R/R	Tank Overflow Screening R/R	Screening Other	Service Meters	Compressor: Oil-less/FG/Sep	Hydrant Maintenance Program	Valve Exercising Program	ASME PRV	Other O&M Notes
39 18/50		Yellow																													\square	_
40 50751		Groop											v				v														\rightarrow	v
41 18800		Green											x				x														ť	X
42 19200		Blue				~	v	_	v																						—	v
44 19890		Blue				x	^		^												x		x			x					× Í	^ X
45 FS117	DOUGLAS FIR CAMPGROUND - FAST	Blue				~													-		~		~			~				ť	Ì	<u>^</u>
46 FS119	DOUGLAS FIR CAMPGROUND - WEST	Blue																													-	-
47 58951	EHLERS LABOR CAMP	Blue																														
48 22895	ELIZA ISLAND BEACH CLUB	Green				x	х				х																				1	х
49 23480	ENTERPRISE ESTATES WATER ASSOC.	Green					х	х	х									х												x	ł	х
50 23485	ENTERPRISE TERRACE WATER ASSN.	Green																														
51 24151	EVERGREEN MOBILE PARK & SALES	Blue						х		х			х		х																:	х
52 24164	EVERGREEN RETREAT MHP	Green					х		х																					>	K (х
53 24195	EVERSON WATER ASSOC	Green																														
54 24200	EVERSON, CITY OF	Green																														
55 07622	EVERYBODY S STORE	Blue																														
56 FS146	EXCELSIOR GROUP SITE CAMPGROUND WS	Green																														
57 02601	FAIRFIELD MHP	Green				X	х														х					х				>	< :	х
58 24850	FERNDALE	Green						х																								
59 24840	FERNDALE MOBILE VILLAGE	Green			X	х		х					х																	>	K)	х
60 25610	FLEMINGS PLATT WATER ASSOCIATION	Blue			х		х		Х				х								х	Х									i	х
61 27450	GEORGIA MANOR WATER ASSOC	Green				х																										
62 27755	GLACIER SPRINGS WATER SYSTEM	Green					х		Х																						?	X
63 95915		Green																													\square	
64 8///2	GLEN COMMUNITY ASSOCIATION	Green				X	X	x																								
65 27950		Green																														
66 28050		Green																													_	
67 NP310		Blue						x																							<u> </u>	
68 28950		Green																													\square	
	GRANDVIEW-NORTHGATE INDUSTRIAL PARK PUD #1	Green						~											~		v										\square	
70 30200		Blue				~		x											x		x										\square	
72 21255		Green				^		v				-		-	-																4	
72 27250		Green					v	^																								
74 33364	HILLTOP WATER OWNERS ASSOCIATION	Green				x	x	x	_			x											x									x
75 FS377	HORSESHOF COVE CAMPGROUND	Blue										~										_	~					_			ť	
76 NP370	HOZOMEEN WATER SYSTEM	Green																														
																																_

Cross Check Number = A-Z DISMd DISMd	SystemName	Permit	Intertie Options	DS/WDM Operator	WTPO Operator	SWSMP Prepare/Update	Coli Monitoring Plan	Chlorine Samples/Reports	Cross Connection Control Plan	O&M Manual	Component Inv & Ass	WUE/Loss Control	System Appr/Dsgn/Anal	As-Built/Record Drawings	System/Controls Schematic	Distribution Mapping	Well Head Protection Plan	Flushing Program	Source Water Meter	Source Inverted Vent/Screen	Source Raw Water Sample Tap	Decomission Old Well	Tank Hatch Inspect/Pictures	Tank Hatch Seal R/R	Tank Overflow Screening R/R	Screening Other	Service Meters	Compressor: Oil-less/FG/Sep	Hydrant Maintenance Program	Valve Exercising Program	ASME PRV	Other O&M Notes
77 56799	IL CAFFE RIFUGIO WATER SYSTEM	Green				X	х												х												;	х
78 07087	INFRA PACIFIC WATER SYSTEM	Green																											\square			
79 35800	INTALCO ALUMINUM CORPORATION WS	Green				X	х																						\square			
80 36268	ISLE AIRE BEACH ASSOCIATION	Green					х					х					х												\square			
81 37950	KELLY ROAD WATER ASSOCIATION	Blue																														
82 08225V	KENDALL ELEMENTARY SCHOOL	Green						х									x												\square)	х
83 00119	KONTREE APARTMENTS WATER SYSTEM	Blue						х)	х
84 44540	LAKE SAMISH TERRACE PARK	Green				х		x :	x				Х)	х
85 44950	LAKE TERRILL WATER ASSOC	Green)	х
86 46300	LAUREL WEST WATER ASSOCIATION	Blue																														
87 43290	LISECC - Lummi Island Scenic Estates	Green																					х			х			\square)	х
88 29014	LOUIE, JOE WATER ASSOCIATION	Green																											\square)	x
89 48875	LUMMI POINT WATER ASSOCIATION	Green																											\square			
90 52957	LWWSD - AGATE HEIGHTS - Tribal	Green																											\square			
91 08118	LWWSD - EAGLERIDGE - Tribal	Green																														
92 95910	LWWSD - SOUTH SHORE WATER SYSTEM - Tribal	Green																														
93 35216	LYNDEN B.SGSA, BELLINGHAM PMT	Blue						х																								
94 49150	LYNDEN WATER DEPARTMENT	Green																														
95 49890	MABERRY PACKING LLC	Blue						x						х															$ \rightarrow $	\rightarrow	$ \rightarrow $	
96 50900	MANTHEYS COUNTRY MOBILE PARK	Blue				x		x																		x		x	$ \rightarrow $	^	<	
97 51100	MAPLE FALLS WATER COOP	Green																											$ \rightarrow $	\rightarrow	$ \rightarrow $	
98 53250		Green						1	x	х			Х																\square		_	
99 AB234		Green						x																					\square		_	
100 25601		Blue				X	x							x															\square	_	_	
101 56874		Blue			x								X									X							\square	_	'	X
102 01468		Green						x																					\rightarrow	\rightarrow	\rightarrow	
103 01357		Biue																											\rightarrow	\rightarrow		X
104 50500		Green					x			x		x				-	x												$ \rightarrow $			x
105 57671		Blue							x																				$ \rightarrow $		-	
106 04048		Blue				x		x											x										\rightarrow	\rightarrow	'	x
109 15676		Green						X																	X				\rightarrow	\rightarrow	\rightarrow	
108 15676		Green																											\rightarrow	\rightarrow	\rightarrow	
110 59050		Blue				v																	v								_	v
111 00012		Blue				^		~															X						\rightarrow	\rightarrow		^
112 50250		Groop						x											v													
112 29230		Groop				v							V	V					^				V									
114 50900		Green	_			^	_						^	٨		_							٨						\rightarrow	\rightarrow	-	
114 33000	NOONJACK WATER DEFT	Green																														

Cross Check Number = A-Z DISMA	SystemName	Permit	Intertie Options	DS/WDM Operator	WTPO Operator	SWSMP Prepare/Update	Coli Monitoring Plan	Chlorine Samples/Reports	Cross Connection Control Plan	O&M Manual	Component Inv & Ass	WUE/Loss Control	System Appr/Dsgn/Anal	As-Built/Record Drawings	System/Controls Schematic	Distribution Mapping	Well Head Protection Plan	Flushing Program	Source Water Meter	Source Inverted Vent/Screen	Source Raw Water Sample Tap	Decomission Old Well	Tank Hatch Inspect/Pictures	Tank Hatch Seal R/R	Tank Overflow Screening R/R	Screening Other	Service Meters	Compressor: Oil-less/FG/Sep	Hydrant Maintenance Program	Valve Exercising Program	ASME PRV	Other O&M Notes
115 04235		Green				x																										
116 5/6/5		Green																													—	x
117 AC316		Green				,	K)	x																								<u> </u>
118 57591		Groop																														-
119 37797		Blue							, , , , , , , , , , , , , , , , , , ,																							-
120 01350		Blue						x 1	x				v																		—	v
121 07507		Groop					,	~					×										v									^
122 02000		Blue					ť	^					^										^									<u> </u>
124 62150		Vellow					,	~																								<u> </u>
125 63350	OLD SETTLERS WATER ASSOCIATION	Green				v	- ,	~				v	v										v									v
126 64150	ORCHARD WATER ASSOCIATION	Green				^	ť	~				^	^										^									^ v
127 AB638	OSTROM MUSHROOM FARM WATER SYSTEM	Green						× 1	x																-							^
128 29746	OWNERS ASSOC OF BEACH CLUB CONDOS	Green				x	ť		~													x			-						x	x
129 02197	PARADISE MARKET 1	Green				x x	ĸ	_										_			x	~									^	^
130 66116	PARADISE PARK WATER SYSTEM	Green					-												_	_												
131 67020	PERCIE ROAD WATER ASSOCIATION	Green					;	ĸ			х																					х
132 55450	PHILLIPS 66 COMPANY	Green																														-
133 52681	PLANTATION RANGE	Blue																														-
134 67900	PLEASANT VALLEY WATER SYSTEM	Green																														
135 95750	POINT ROBERTS WATER DISTRICT #4	Green																														
136 68350	POLE ROAD WATER ASSOCIATION	Green					2	ĸ					х																			
137 56829	RADER FARMS LABOR CAMP	Blue					2	ĸ																								
138 27631	RASPBERRY RIDGE WATER ASSOCIATION	Green				х																				х						х
139 71290	RATHBONE PARK WATER ASSOC	Yellow						2	x																							х
140 08495	RIVER OF LIFE COMMUNITY CHURCH	Blue		х																												
141 72800	RIVER RD WATER ASSOCIATION	Green				х																			х			х				
142 73750	ROEDERLAND WATER ASSOCIATION	Blue				x x	K D	ĸ																								
143 NP160	ROSS LAKE RESORT	Blue																														х
144 74705	ROYAL COACHMAN MOBIL EST	Green																														х
145 15064	SAMISH PARK	Blue																														
146 76105	SANDY POINT IMPROVEMENT CO	Green)	K D	ĸ									х															х
147 FS020	SHANNON CREEK CAMPGROUND	Blue																														
148 FS843	SILVER FIR CAMPGROUND EAST	Blue																														
149 FS130	SILVER FIR CAMPGROUND WEST	Blue																														
150 52666	SILVER LAKE PARK - HORSE CAMP	Blue																														
151 52679	SILVER LAKE PARK - MAIN CAMPGROUND	Blue																														
152 79800	SKOOKUM CHUCK WATER ASSOCIATION	Green																														
													D	OH S	ANIT	ARY	SUR	/EY I	NFO	RMA	TION	I										
----------------------------------	-------------------------------------	--------	------------------	-----------------	---------------	----------------------	----------------------	--------------------------	-------------------------------	------------	---------------------	------------------	-----------------------	--------------------------	---------------------------	----------------------	---------------------------	------------------	--------------------	-----------------------------	-----------------------------	----------------------	-----------------------------	---------------------	-----------------------------	-----------------	----------------	-----------------------------	-----------------------------	--------------------------	----------	-------------------
Cross Check Number = A-Z BISA	SystemName	Permit	Intertie Options	DS/WDM Operator	WTPO Operator	SWSMP Prepare/Update	Coli Monitoring Plan	Chlorine Samples/Reports	Cross Connection Control Plan	O&M Manual	Component Inv & Ass	WUE/Loss Control	System Appr/Dsgn/Anal	As-Built/Record Drawings	System/Controls Schematic	Distribution Mapping	Well Head Protection Plan	Flushing Program	Source Water Meter	Source Inverted Vent/Screen	Source Raw Water Sample Tap	Decomission Old Well	Tank Hatch Inspect/Pictures	Tank Hatch Seal R/R	Tank Overflow Screening R/R	Screening Other	Service Meters	Compressor: Oil-less/FG/Sep	Hydrant Maintenance Program	Valve Exercising Program	ASME PRV	Other U&IVI NOTES
153 AA034	SLAVIC GOSPEL CHURCH WATER SYSTEM	Blue			х								х				х														x	
154 23011	SMALLWOOD SHORES WELL	Blue				х										х															x	
155 80550	SMITH ROAD WATER ASSOCIATION	Blue				х											х			х	х		х		:	x					x	
156 58864	STARVIN SAM S #15 KENDALL WATER SYS	Green					х	х														х										
157 56821	STARVIN-SAM S #19/SLATER ROAD WS	Green				х	х		х																					x		
158 84850	SUMAS RURAL WATER ASSOCIATION	Green																														
159 84870	SUMAS WATER DEPT	Green																														
160 08353	SUNRISE GROCERY STORE	Green				х	х														х											
161 06514	SUNSET WATER & MAINTENANCE ASSOC	Green																													х	
162 86200	SUNSET WATER ASSOCIATION	Green				х																						х				
163 59394	SWIFT CREEK CAMPGROUND WATER SYSTEM	Green					х																			x						
164 87120	TALL CEDARS ESTATES WATER ASSOC.	Blue																														
165 AD051A	THE CHEESE FARM	Green																														
166 08262	THE RUSSELL GROUP WATER SYSTEM	Green				х	х																									
167 88050	THORNTON WATER ASSOCIATION	Green				х													x	x								х				
168 05754	UPPER BAKER WATER SYSTEM	Blue				х	х															х									х	
169 91000	VALLEY VIEW WATER ASSOC	Green					х																									
170 56831	VICENTE FARMS & SONS ENTERPRISE	Green				х																										
171 02153	VICENTE FARMS & SONS-MISSION	Blue				х													x													
172 91650	VICTOR WATER ASSOCIATION	Blue				х		x																							х	
173 92150	WAHL WATER ASSOC	Blue				х	х										х				х					x		х				
174 95914	WHATCOM COUNTY WATER DIST #13	Green																														
175 95700	WHATCOM COUNTY WATER DIST #2	Green						x																								
176 95900	WHATCOM COUNTY WATER DIST #7	Green						х	х																				Ţ	x		
177 95935	WHATCOM MEADOWS	Green				x																										
178 96700	WICKERSHAM WATER ASSOCIATION	Blue				х	х																									
179 96888	WILDWOOD RESORT	Green						x																							х	
180 97110	WILLEYS LAKE TERRACE WATER ASSN	Green																														
181 61494	WISER LAKE KINGDOM HALL JEHOVAHS	Green					х	х	х																							
182 99550	Y-SQUALICUM WATER ASSN	Green																														
	Column Totals		1	1	6	51	34	52	15	4	2	5	14	4	1	1	11	1	9	3	10	5	12	1	5	10	0	5	0	2	9 5	54

Appendix 4

Technical Support Program Program Survey Questions and Responses

Q1 What is your role with the water system? (Please check all that apply)



ANSWER CHOICES	RESPONSES	
Owner	4.00%	3
Manager	28.00%	21
Board Member	21.33%	16
System Operator	61.33%	46
Other	5.33%	4
Total Desmandanta, 75		

Total Respondents: 75

#	OTHER (PLEASE SPECIFY)	DATE
1	Association Member - thereby, part owner	11/30/2017 2:07 AM
2	Secretary/Bookkeeper	11/16/2017 5:33 PM
3	Secretary	11/13/2017 2:10 PM
4	Office Manager	11/13/2017 12:04 PM
5	Office Manager	11/13/2017 8:30 AM
6	Sampling and testing water daily.	10/30/2017 2:47 PM



ANSWER CHOICES	RESPON	SES
Group A Community System: serves 15 or more connections year-round, or 25 or more residents at least 180 days per year.	88.00%	66
Group A Transient noncommunity: serves a population that changes day to day, such as campground, hotels, corner markets, rest areas, and restaurants with their own water supply.	5.33%	4
Group A Non transient noncommunity: serve a nonresidential population that does not change day to day, such as schools, day care centers, religious centers (churches/temples), or hospitals with their own water supply.	5.33%	4
Don't Know	1.33%	1
TOTAL		75

Q2 What is the type of water system?



ANSWER CHOICES	RESPONSES	
Water Association (governed by elected board of directors and owned by its members)	65.33%	49
Privately Owned (trailer park, business park, service station, church, school, etc.)	22.67%	17
Home Owners Association (oversees water, roads, common areas, etc.)	1.33%	1
Government (City, Town, State, Federal, Special District)	9.33%	7
Don't Know	0.00%	0
Other	1.33%	1
TOTAL		75

#	OTHER (PLEASE SPECIFY)	DATE
1	Water Association governed by Members administered by Elected Board	10/28/2017 8:02 AM

Q3 What is the type of water system ownership?

Q4 About how many active connections does the water system currently serve?



ANSWER CHOICES	RESPONSES	
1 to 14	10.67%	8
15 to 50	32.00%	24
51 to 100	28.00%	21
101 to 250	16.00%	12
Over 250	13.33%	10
TOTAL		75

Q5 What types of customers does the water system serve? (Please check all that apply)



ANSWER CHOICES	RESPONSES	
Agricultural/Livestock	29.33%	22
Commercial/Business	38.67%	29
Daycare	13.33%	10
Food Service	12.00%	9
Industrial	8.00%	6
Residential	88.00%	66
Residential Part-Time (Seasonal)	16.00%	12
Recreational	9.33%	7
School	12.00%	9

Whatcom Water Systems Survey

Temporary Farm Worker Housing	5.33%	4
Other	6.67%	5
Total Respondents: 75		

#	OTHER (CHURCH, FIRE STATION, ETC.)	DATE
1	Fire Station	11/13/2017 3:18 PM
2	Fire Station, Cemetary	11/11/2017 9:14 AM
3	Church	11/3/2017 10:54 AM
4	Churches, Dentist, Fire hall	11/2/2017 2:47 PM
5	Church, Fire Station, Government Buildings	11/1/2017 8:50 AM
6	Church, recreation, other's.	10/30/2017 3:10 PM
7	Camp and retreat, churches and others.	10/30/2017 2:47 PM
8	Tribal Administrative Offices	10/28/2017 1:22 PM
9	Churches, Fire Station, Power Substation,	10/27/2017 7:53 AM



Q6 What color is the systems oper	ating permit	?
-----------------------------------	--------------	---

ANSWER CHOICES	RESPONS	SES
Green: Substantially in compliance with regulations. Adequate for existing and additional services up to number approved.	96.00%	72
Yellow: Substantially in compliance with all requirements. Adequate for existing uses an additional services up to number approved. But has been notified to complete a planning requirement or is under a compliance agreement and acting in accordance with the agreement.	0.00%	0
Blue: Substantially in compliance with the requirements. Adequate for existing uses, but not for adding new connections. However the system does not have an approved water system design or is no longer operating consistently with that design, or has exceeded the number of approved connections.	2.67%	2
Red: substantially out of compliance with the requirements. Inadequate for existing uses and no additional connections are allowed.	0.00%	0
Don't know	1.33%	1
TOTAL		75

Q7 How do you rate your water system's overall condition?



ANSWER CHOICES	RESPONS	SES
Excellent, everything is in very good condition and the system can focus on long term planning	50.67%	38
Good, most everything is in good condition and the focus is on routine repairs and maintenance.	30.67%	23
Getting By, everything is working today, nothing is critical or urgent but our system has issues that need to be addressed	16.00%	12
Poor, our system is just getting by day to day and we frequently have repairs	1.33%	1
Very Poor, our system is failing and cannot survive a major event	1.33%	1
TOTAL		75

Q8 Generally speaking do you feel that the water system has adequate technical capacity? Technical capacity means the physical and operational ability of the system to serve customers now and in the future. Here are some examples of strong technical capacity: -The system has a qualified operator with the knowledge and skills to operate the system. -The system's source can meet current and anticipated demand. -The system's source is adequately protected, treated and sampled. -System infrastructure is in good condition.



ANSWER CHOICES	RESPONSES	
Strongly agree	58.90%	43
Agree	34.25%	25
Neither agree nor disagree	4.11%	3
Disagree	2.74%	2
Strongly disagree	0.00%	0
TOTAL	7	73

Q9 What are your primary sources of water supply? (Please check all that apply)



ANSWER CI	HOICES	RESPONSES		
Surface wate	r	6.85%		5
Groundwater	- well	78.08%		57
Groundwater	- Spring	4.11%		3
Intertie - Who	blesale water	13.70%		10
Other		0.00%		0
Total Respor	ndents: 73			
#	OTHER (PLEASE SPECIFY)		DATE	
1	we have 2 wells		10/27/2017 7:54 AM	

Q10 Is the water system concerned about any known or potential contamination of the source?



ANSWER CHOICES	RESPONSES	
Yes	28.77%	21
No	68.49%	50
Don't Know	2.74%	2
TOTAL		73

Q11 About how old is the majority of your water distribution system (piping and service connections)?



ANSWER CHOICES	RESPONSES	
0-10 years	12.33%	9
11-25 years	21.92%	16
26-50 years	64.38%	47
Over 50 years	1.37%	1
TOTAL		73

Q12 Does the system have a plan for replacing older portions of the distribution system?



ANSWER CHOICES	RESPONSES	
No plans at this time, the pipes don't seem to be a problem	49.32%	36
No plans at this time, but the pipes need repair more frequently in recent years	20.55%	15
No plans but we will be planning for replacement in the coming years	8.22%	6
Yes there are plans for replacement but don't have the funding	8.22%	6
Yes there are plans for replacement and funding	13.70%	10
TOTAL		73

Q13 Would you be interested in help completing a facilities assessment to better understand the condition of your water system and how to plan for future replacement of older infrastructure?



ANSWER CHOICES	RESPONSES	
Yes	24.66%	18
No	75.34%	55
TOTAL		73

Q14 Does the water system have a water storage tank or reservoir that stores water until it is needed? This does not refer to pressure or bladder tanks that help maintain system pressure.



ANSWER CHOICES	RESPONSES	
Yes	71.23%	52
No	28.77%	21
TOTAL		73

Q15 Does the storage tank have a hatch and vent that are properly sealed and secure?



ANSWER CHOICES	RESPONSES	
Yes	86.67% 5	2
No	10.00%	6
Don't know	3.33%	2
TOTAL	6	0

Q16 Would the system like help to inspect the hatch or vent?



ANSWER CHOICES	RESPONSES	
Yes	6.78%	4
No	93.22%	55
TOTAL		59

Q17 Does the system have one or more bladder tanks to help maintain pressure in the system?



ANSWER CHOICES	RESPONSES	
Yes	57.53%	42
No	42.47%	31
TOTAL		73

Q18 Failing bladder tanks can be a breeding ground for harmful bacteria. Have the bladder tanks been checked recently to make sure they are operating properly and not full of water, a condition referred to as water logged?



ANSWER CHOICES	RESPONSES	
Yes	86.05%	37
No	13.95%	6
TOTAL		43

Q19 Is the water system confident in its understanding of the State Department of Health (DOH) water quality regulations and requirements for the water system?



ANSWER CHOICES	RESPONSES	
Very confident	28.77%	21
Somewhat confident	69.86%	51
Not very confident	1.37%	1
Have no idea	0.00%	0
TOTAL		73

Q20 Would the water system like assistance to better understand the water quality requirements for the water system?



ANSWER CHOICES	RESPONSES	
Yes	4.08%	2
No	81.63% 4	40
Maybe but not now	14.29%	7
TOTAL	4	49

Q21 Does the system have water treatment? (Please select all that apply)



ANSWER CHOICES	RESPONSES	
No Treatment	33.33%	17
Chlorine for disinfection and/or oxidation	49.02%	25
Ozone for disinfection or oxidation	0.00%	0
Filtration for Arsenic, Iron, and/or Manganese removal	13.73%	7
Ion Exchange for Iron and Manganese removal and/or Water Softening	1.96%	1
Don't Know	0.00%	0
Other	21.57%	11
Total Respondents: 51		

#	OTHER (PLEASE SPECIFY)	DATE
1	Soda ash	11/13/2017 2:13 PM
2	Corrosion Control	11/11/2017 9:15 AM
3	Soda Ash and Aeration	11/11/2017 9:06 AM
4	UV	11/11/2017 8:57 AM
5	Corrosion Control	11/9/2017 10:09 AM
6	Corrosion Control	11/8/2017 3:19 PM
7	Aeration	11/7/2017 7:34 PM
8	Chlorine treatment, but currently off line as it was not functioning well	11/7/2017 8:43 AM
9	Corrosion Control	11/6/2017 8:12 AM

Whatcom Water Systems Survey

SurveyMonkey

10	Corrosion Control Caustic Soda	11/6/2017 8:06 AM
11	Corrosion Control	11/5/2017 8:41 AM
12	Soda ash for ph control	11/1/2017 7:29 AM
13	Soda Ash for Corrosion Control	10/30/2017 7:54 AM
14	We are quanitfying Mn at this time to determine removal options	10/28/2017 8:06 AM
15	Blending from two well sources and aeration	10/27/2017 6:44 AM
16	Soda ash to control the ph	10/26/2017 6:05 PM
17	Source (PUD#1) is treated	10/26/2017 3:43 PM
18	Corrosion Control	6/4/2017 7:56 AM

Q22 Does the water system have someone familiar with the treatment system that can troubleshoot it when something is not working properly?



ANSWER CHOICES	RESPONSES	
Not Applicable	29.41%	15
Yes, we have someone familiar with the treatment system	50.98%	26
Yes, but we rely on a treatment vendor to troubleshoot, maintain, and repair the treatment system	17.65%	9
No, we rely on a treatment vendor to troubleshoot, maintain, and repair the treatment system	1.96%	1
No, we have no one to rely on when there is a problem with the treatment system	0.00%	0
TOTAL		51

Answered: 69 Skipped: 5 Volunteer Owner Direct hire employee Contract operator... Satellite Management... System does not currentl ... Don't Know Other 0% 90% 100% 10% 20% 30% 40% 50% 60% 70% 80%

Q23 Who serves as the water sys	tems primary	certified of	operator?
---------------------------------	--------------	--------------	-----------

ANSWER CHOICES	RESPONSES	
Volunteer	7.25%	5
Owner	2.90%	2
Direct hire employee	10.14%	7
Contract operator (individual that provides service to multiple water systems)	78.26%	54
Satellite Management Agency (organization approved by DOH to operate multiple systems)	1.45%	1
System does not currently have a certified operator	0.00%	0
Don't Know	0.00%	0
Other	0.00%	0
TOTAL		69

#	OTHER (PLEASE SPECIFY)	DATE
	There are no responses.	

Q24 How long has the current certified operator served the water system?



ANSWER CHOICES	RESPONSES	
1-5 Years	31.88%	22
6-10 Years	42.03%	29
11 Years or more	26.09%	18
Don't Know	0.00%	0
TOTAL		69

Q25 Does the water system have a backup certified operator or other person capable of operating the water system when the primary operator is not available?



ANSWER CHOICES	RESPONSES	
Yes	78.26%	54
No	17.39%	12
Don't Know	4.35%	3
TOTAL		69

Q26 Does the water system anticipate needing a primary or backup certified operator in the next 1-5 years for any reason such as vacation, retirement or relocation of the current operator?



ANSWER CHOICES	RESPONSES	
Yes	15.94%	11
No	79.71%	55
Don't Know	4.35%	3
TOTAL		69

Q27 Does the system have a Cross-Connection Control Program?The purpose of a Cross-Connection Control Program is to reasonably reduce the risk of contamination to the water system by eliminating or protecting against any actual or potential physical connection between a public water system and any source of non-potable liquid, solid, or gas that could contaminate the potable water supply by back flow.



ANSWER CHOICES	RESPONSES	
Don't Know	23.19%	16
No	18.84%	13
No, but we plan work on it soon	20.29%	14
Yes, we have started working on it	15.94%	11
Yes, we have a fully implemented Cross-Connection Control Program	21.74%	15
TOTAL		69

Q28 Is the system aware that it is required to have a designated Cross-Connection Control Specialist to be responsible and in charge of the Cross-Connection Control Program?



ANSWER CHOICES	RESPONSES	
No, we were not aware of this	8.70%	6
Yes, but we do not have any backflow assemblies and therefore don't need to retain a Cross-Connection Control Specialist	33.33%	23
Yes, but we have not designated a Cross-Connection Control Specialist yet	30.43%	21
Yes, we have a designated Cross-Connection Control Specialist	21.74%	15
Don't Know	5.80%	4
TOTAL		69

Q29 During or following your systems most recent Sanitary Survey were there any of the following identified? (Please check all that apply):A sanitary survey is an inspection of the water system facilities, operations, and records by a DOH representative to assess and identify conditions that may present a sanitary or public health risk. In Washington State, all Group A public drinking water systems must have a routine sanitary survey once every three to five years.



ANSWER CHOICES	RESPONS	SES
Significant Deficiencies: A deficiency that directly creates a significant public health risk. It must be addressed (either fixed or provide a schedule) within 45 days of the date of the report.	1.45%	1
Significant Findings: A defect or problem which, if left unaddressed, creates a significant risk to the physical safety, security, or reliability of the public drinking water supply. It must be addressed (either provide pictures or provide a schedule for doing so) within 45 days of the date of the report.	13.04%	9
Observations: A sanitary survey finding in which a regulatory requirement is not met, and the problem or defect is not categorized as a significant deficiency or significant finding.	28.99%	20
Recommendations: An action item that will improve the Public Health protection of the water system/or improve operations.	50.72%	35
None	37.68%	26
Don't Know	10.14%	7
Total Respondents: 69		

Q30 Would the system be interested in help to review the last sanitary survey, and develop a plan to address any Deficiencies, Findings, Observations, or Recommendations?



ANSWER CHOICES	RESPONSES
Yes	5.80% 4
No	94.20% 65
TOTAL	69

Q31 What Areas of Technical Assistance would the water system be interested in?(Please select all that apply)



ANSWER CHOICES	RESPONSES	
Distribution System and Facility Mapping	31.88%	22
Operation and Maintenance Program development	11.59%	8
Securing a Primary Certified Water Operator (required by DOH)	1.45%	1
Securing a Backup Certified Water Operator (recommended)	7.25%	5

Whatcom Water Systems Survey

SurveyMonkey

Understanding Water Quality Testing and Results	2.90%	2
Water Treatment Operations and Maintenance	4.35%	3
Finding someone to help with General Repairs, Maintenance, Meter Reading, Etc.	2.90%	2
Finding someone to help with Emergency Response and Repairs	7.25%	5
Understanding need for a hydrant maintenance program and related liability	2.90%	2
Developing the Cross-Connection Control Program	40.58%	28
Understanding Cross-Connection Backflow Assembly tracking and reporting requirements	34.78%	24
Securing a Cross-Connection Control Specialist (required by DOH)	2.90%	2
None	39.13%	27
Other	4.35%	3
Total Respondents: 69		
Q32 Generally speaking do you feel that the water system has adequate managerial capacity?Adequate managerial capacity means the system has the administrative and organization ability to be successful now and in the future. Here are some examples of strong managerial capacity: -Owners, managers, and operators are accountable and knowledgeable about the system. -Owners, managers, and operators receive ongoing training. -Owners, managers, and operators interact well with each other. -We plan for current and future needs. -We interact well with customers and regulatory agencies.



ANSWER CHOICES	RESPONSES
Strongly Agree	63.24% 43
Agree	27.94%
Neither agree nor disagree	8.82%
Disagree	0.00%
Strongly disagree	0.00%
TOTAL	68

Q33 How many years on average have the majority of governing body (e.g. Members, board members) served?



ANSWER CHOICES	RESPONSES	
Less than 2 years	4.41%	3
3-5 Years	16.18%	11
More than 5 years	79.41%	54
TOTAL		68

Q34 Does the water system have bylaws and/or policies in place by which to govern the water system including duties and responsibilities of the governing body?



ANSWER CHOICES	RESPONSES	
Yes	83.82%	57
No	16.18%	11
TOTAL		68

Q35 Does the system have a completed Water System Plan (WSP) or Small Water System Management Program (SWSMP) that is actively used to operate and manage the water system?



ANSWER CHOICES	RESPONSES	
Yes – We have a Water System Plan or SWSMP that is used to manageand operate our system	58.82%	40
No - We have started the WSP or SWSMP but it is not complete	35.29%	24
No - We do not have a WSP or SWSMP or our existing planning documents are no longer useful.	5.88%	4
TOTAL		68

Q36 Would you like help preparing, updating or completing the water system plan?



ANSWER CHOICES	RESPONSES	
Yes	32.14%	9
No	67.86%	19
TOTAL		28

Q37 Does the water system have enough connections available to meet current demand in its service area?



ANSWER CHOICES	RESPONSES	
Yes	83.82%	57
No	14.71%	10
Don't Know	1.47%	1
TOTAL		68

Q38 Does the system have enough water rights to meet future needs?



ANSWER CHOICES	RESPONSES	
Yes	69.12%	47
No	17.65%	12
Don't Know (Unsure)	13.24%	9
TOTAL		68

Q39 Which physical or legal limitations does the water system have, if any? (Please select all that apply)



ANSWER CHOICES	RESPONSES	
None	45.59%	31
We need more connections but do not know where to start	1.47%	1
Limited Legal Water Rights	35.29%	24
Limited Physical Water Quantity	23.53%	16
Poor Water Quality	8.82%	6
Not a Reliable Source (Wells/Springs)	1.47%	1
Stream Flow Limitations	1.47%	1
Seasonal Limitations/Restrictions (Legal and/or Physical)	1.47%	1
Failing Infrastructure (Distribution/Pumping/Source/Services)	2.94%	2

Whatcom Water Systems Survey

SurveyMonkey

No Emergency or Backup Supply	27.94%	19
Other	2.94%	2
Total Respondents: 68		

Q40 Do you understand the Department of Ecology (DOE) water right regulations/requirements for your water system?



ANSWER CHOICES	RESPONSES	
Very Confident	10.29%	7
Somewhat Confident	79.41%	54
Not Very Confident	7.35%	5
Not Confident at All	2.94%	2
TOTAL		68

Q41 Was the water system impacted by the drought in 2015?



ANSWER CHOICES	RESPONSES	
No not at all	57.35%	39
No but we were concerned about having enough water available if the drought continued	30.88%	21
Yes but we were able to manage our water supply and had enough water	10.29%	7
Yes we had periods when our water supply did not meet our needs	1.47%	1
TOTAL		68

Q42 Do you have an emergency response plan to deal with water shortages caused by drought and other natural disasters?



ANSWER CHOICES RESPONSES	
Yes 26.47%	18
No 73.53%	50
TOTAL	68

Q43 Does your system have an emergency or backup source of supply?



33.82%	22
Yes, we have a backup source of water such as a backup well or emergency intertie	10
No 66.18% 4	15
TOTAL	38

Q44 Is the water system interested in exploring the possibility of connecting to a nearby water system for additional water supply, an emergency supply, or possibly to form a consolidated system? The responsibilities and costs of owning and operating a public water system can be overwhelming. Some water systems are interested in the economic and operational benefits of consolidating facilities and operations with another utility. "Near" or "Nearby" means your distribution system is within 1,000 feet of the other water utility's distribution system.



ANSWER CHOICES	RESPONS	SES
There is not another system near our system.	20.59%	14
Yes - We would consider the possibility of connecting with a nearby system to receive additional water supply or emergency supply from them and we are interested in consolidation.	7.35%	5
Yes - We would consider the possibility of connecting with a nearby system to receive additional water supply or emergency supply from them but we are not interested in consolidation.	17.65%	12
Yes - We would consider the possibility of connecting with a nearby system to provide them additional water or emergency supply but we are not interested in consolidation.	4.41%	3
Not Sure - We would need to understand the options, potential costs and benefits first.	33.82%	23
No - We are not willing to intertie or consolidate with a nearby system.	16.18%	11
TOTAL		68

Q45 Is the water system interested in exploring the possibility of sharing management and operations with another water system? Sometimes connection and/or consolidation isn't a good option, possibly due to the distance between systems. In these situations, some water systems are interested in the benefits of sharing management and/or operations with another water system.



ANSWER CHOICES	RESPONS	SES
No - We are not interested in the services of an outside entity.	85.29%	58
Maybe - We would consider sharing operations or management but we would need to understand the options, potential costs and benefits first.	13.24%	9
Yes - We would consider an agreement for operations and management by another water system or Satellite Management Agency.	1.47%	1
TOTAL		68

Q46 What Other Areas of Managerial Assistance would the water system be interested in? (Check all that apply)



ANSWER CH	IOICES	RESPONSES	
Bylaws and P	olicy review and update	10.29%	7
Wellhead pro	tection/source water protection planning	7.35%	5
Component Ir	oventory and Assessment for Capital Planning	10.29%	7
Emergency R	esponse Planning	22.06%	15
Coliform Mon	itoring Plan	13.24%	9
Risk Manage	ment and Insurance Coverage	7.35%	5
Water Systen	n Plan (WSP) or Small Water System Management Program (SWSMP)	7.35%	5
None		66.18%	45
Other		4.41%	3
Total Respon	dents: 68		
#	OTHER (PLEASE SPECIFY)	DATE	
1	Promoting member participation for on-going board leadership and succession planning.	11/30/2017 2:23 AM	

2	Intertie with adjacent utilities	11/9/2017 9:59 AM
3	Help developing a rate structure that achieves better water conservation	10/27/2017 6:53 AM

Q47 Generally speaking do you feel that the water system has adequate financial capacity? Financial capacity means the system can generate or obtain enough funds to maintain the system and pay for future improvements. Here are some examples of strong financial capacity: -System revenue pays for the full cost of providing service -We know and can measure all costs and revenues -Reserves are available for unexpected expenses -We use good budgeting and accounting practices -We can access capital through public or private sources



ANSWER CHOICES	RESPONSES	
Strongly agree	48.53%	33
Agree	30.88%	21
Neither agree nor disagree	19.12%	13
Disagree	1.47%	1
Strongly disagree	0.00%	0
TOTAL		68

Q48 How often do you compare operating expenses with operating revenue?



ANSWER CHOICES	RESPONSES	
Monthly	17.65%	12
Every two months	2.94%	2
Quarterly	13.24%	9
Semi-annually	1.47%	1
Annually	57.35%	39
Regularly but not on a set schedule	2.94%	2
Rarely or Never	4.41%	3
TOTAL		68

Q49 Do you prepare a budget each year?



ANSWER CHOICES	RESPONSES	
Yes	79.41%	54
No	20.59%	14
TOTAL		68

54 / 68

Q50 For last calendar year, did your system generate enough money to cover all system costs?



ANSWER CHOICES	RESPONSES	
Yes - We broke even or had a surplus last year.	92.65%	63
No - We had to use reserves, cut expenses, or borrow money.	7.35%	5
TOTAL		68

Q51 Which of the following reserve funds does the system have in place? (Please check all that apply)



ANSWER CHOICES	RESPONS	SES
Operating cash reserve - protects the system from cash flow problems when you must pay bills before customers have paid for service. This includes routine repairs and maintenance. We recommend setting aside one-eighth of your annual operating expenses.	95.59%	65
Emergency reserve - allows you to replace a major, critical component of your system if it fails unexpectedly. This includes a well pump or booster pump failure that will cost several thousand dollars. We recommend setting aside the cost of your single most expensive mechanical component	79.41%	54
Short-lived asset replacement reserve - allows you to plan for replacement of assets with a useful life of about 5 years or less (such as electrical controls, filter media, computers, and hypochlorinators) without disrupting your annual budget or emergency reserve.	44.12%	30
Total Respondents: 68		

Q52 What is the average monthly rate charged to a single-family residential customers? If your water system doesn't send monthly bills, divide the average bill by the number of months in the billing cycle (for example, if the annual bill is \$600, divide that number by 12 for a monthly average of \$50).



ANSWER CHOICES	RESPONSES	
Less than \$20.00 per month	17.65%	12
\$20.01-\$30.00 per month	26.47%	18
\$30.01-\$40.00 per month	35.29%	24
\$40.01-\$60.00 per month	16.18%	11
\$60.01-\$80.00 per month	4.41%	3
Greater than \$80.00 per month	0.00%	0
TOTAL		68

Q53 How many times has the water system's rate been increased in the past 10 years?



ANSWER CHOICES	RESPONSES	
0	30.88%	21
1-2	55.88%	38
3-4	7.35%	5
5 or more	5.88%	4
TOTAL		68

Q54 Which of the following best describes the rate structure you use?



ANSWER CHOICES	RESPONS	SES
Flat rate based on unmetered consumption - Services aren't metered, so each customer pays the same monthly, quarterly, or yearly rate.	38.24%	26
Declining block rate - The cost of each billing unit (1,000 gallons or 100 cubic feet of water) decreases as the amount used goes up. The first block of use is charged at one rate, the next block is charged at a lower rate, and so forth. This rate structure gives price breaks to high-volume users.	1.47%	1
Uniform block rate - The cost of each billing unit stays the same regardless of how much water is used. For example, a customer using 5,000 gallons per month pays the same price for each 1,000-gallon unit of water as a customer that uses 20,000 gallons per month.	22.06%	15
Inclining block rate - The cost of each billing unit increases as the amount used goes up. The first block of use is charged at one rate, the next block is charged at a higher rate, and so forth. This rate structure rewards water conservation.	33.82%	23
Seasonal rate - The cost of each billing unit increases or decreases according to water demand and weather conditions. Systems usually charge higher prices in the summer months when demand is highest and water supplies are stressed. This rate structure rewards water conservation.	4.41%	3
TOTAL		68

Q55 Do you have a plan to make capital improvements (such as replace water mains, construct/rehabilitate a well, or construct/rehabilitate a reservoir) in the next 6 years?



ANSWER CHOICES	RESPONS	ES
Yes	32.35%	22
No - we assessed our facilities and no improvements are needed in the next 6-year period.	51.47%	35
No - we assessed our facilities and need to make improvements, but have no plans to do so in the next 6-year period.	11.76%	8
No - we have not assessed our facilities.	4.41%	3
TOTAL		68

Q56 Which source would likely contribute the most funds to complete future capital improvements? (Please answer regardless of whether you have a plan to make improvements)



ANSWER CHOICES	RESPONSES	
Water System Funds (example: savings and/or reserves)	76.47%	52
Line of Credit/Private Loan (example: bank loan)	2.94%	2
Government Loan (example: State Revolving Loan Fund/USDA)	13.24%	9
Other	7.35%	5
TOTAL		68

#	OTHER (PLEASE SPECIFY)	DATE
1	Assessment of users.	11/30/2017 12:00 PM
2	Recently had govt loan for improvements	11/20/2017 6:44 PM
3	current funds plus short term rate increase as needed	11/7/2017 9:06 AM
4	Board, Churches, Donations.	10/30/2017 3:25 PM
5	Our reserves and ossibly loans or grants.	10/27/2017 8:05 AM

Q57 What other areas of assistance would the water system be interested in?(Select all that apply)



ANSWER CH	IOICES	RESPO	NSES
Bookkeeping		5.88%	4
Recordkeepir	ng (Members/Asset Management)	2.94%	2
Utility billing		7.35%	5
None		89.71%	61
Other		1.47%	1
Total Respondents: 68			
#	OTHER (PLEASE SPECIFY)		DATE

#	OTHER (PLEASE SPECIFY)	DATE
1	Succession planning and member participation for long-term management	11/30/2017 2:28 AM

Q58 What is the best method for you to receive local assistance? (Please check all that apply)



ANSWER CHOICES	RESPONSES	
Phone	68.18%	45
Email	83.33%	55
Onsite/In Person	74.24%	49
Group Setting/Workshop	33.33%	22
Conferences	25.76%	17
Other	0.00%	0
Total Respondents: 66		

#	OTHER (PLEASE SPECIFY)	DATE
	There are no responses.	



Q59 What is the best time to receive assistance?

ANSWER CHOICES	RESPONSES	
Daytime	86.36%	57
Evening	33.33%	22
Saturday	10.61%	7
Total Respondents: 66		

Q60 Would you be open to participating in a follow-up interview?



ANSWER CHOICES	RESPONSES	
No	80.30%	53
Yes - Please provide your name and contact information for your preferred method of communication.	19.70%	13
TOTAL		66

#	NAME WITH EMAIL OR PHONE	DATE
1	John Ivary, jivary@outlook.com, 360-384-2802	11/30/2017 12:06 PM
2	dave@laketerrillwater.com; David Jungkuntz; 360.383.9925	11/30/2017 2:41 AM
3	g.watson@asu.edu	11/20/2017 6:46 PM
4	Kevin Southworth kevin@lisecc.com 360-758-7055	11/11/2017 7:30 AM
5	rickbbenson@gmail.com	11/9/2017 3:09 PM
6	tunger@jepsonengineering.com	11/7/2017 11:12 AM
7	Nick Solberg, campnhuntelk@comcast.net, 360-927-9623	11/7/2017 9:13 AM
8	Jin Glass jglass@ci.everson.wa.us	11/2/2017 2:59 PM
9	Ruben.Hernandez@cityofsumas.com	11/1/2017 9:04 AM
10	demingwaterassociation@gmail.com	10/28/2017 2:09 PM
11	Douglas Wittinger, Deer CReek Water 360.820.4314	10/27/2017 8:07 AM
12	Kent Stoddard . skentstoddard@gmail.com	10/27/2017 7:03 AM
13	Wayne Braun wvlbraun@comcast.net	10/26/2017 4:05 PM

Q61 Would you like assistance with one or more areas to help build water system capacity?



ANSWER CH	IOICES		RESPONSES	;
No			95.45%	63
Yes - Please	provide your name and contact information for your preferred method of communication.		4.55%	3
TOTAL				66
#	(NAME WITH EMAIL OR PHONE)	DATE		
1	dave@laketerrillwater.com; David Jungkuntz; 360.383.9925	11/30/2	2017 2:41 AM	
2	tunger@jepsonengineering.com	11/7/20	017 11:12 AM	
3	demingwaterasssociation@gmail.com	10/28/2	2017 2:09 PM	
4	Miie Skehan 360-758-7333	10/27/2	2017 5:30 AM	

Q62 What is the single largest issue your system is faced with today?

Answered: 23 Skipped: 51

#	RESPONSES	DATE
1	No. We just changed our certified operrator company this month and feel very comfortable with their expertise in operating our water system.	11/30/2017 12:06 PM
2	Board Member succession planning and depth of leadership to balance system management with careers and family life.	11/30/2017 2:41 AM
3	Completing our SWSSMP	11/20/2017 6:46 PM
4	Financing public works projects (like DOT replacing bridges in which we have to relocate our water lines)	11/13/2017 3:28 PM
5	Reading meters	11/13/2017 2:25 PM
6	maintenance	11/9/2017 4:16 PM
7	none	11/9/2017 3:25 PM
8	hillslope slump at the wellhead that would divert water collection	11/9/2017 3:09 PM
9	By-Laws and rules of operation	11/7/2017 11:12 AM
10	Operational maintenance, planned replacement of critical assets, and system recovery in the event a critical failure	11/7/2017 9:13 AM
11	Replacing aging infrastructure	11/2/2017 2:59 PM
12	Wellhead Protection and Water Rights	11/1/2017 9:04 AM
13	None	10/29/2017 8:06 AM
14	Replacement of the spring field collection system including replacement and relocation of transmission lines to the treatment facility.	10/28/2017 2:09 PM
15	Demand for new water shares with not enough water rights to supply them all	10/27/2017 8:49 AM
16	Ensuring the County is honoring the terms and intent of the new WCCWSP	10/27/2017 8:07 AM
17	Compliance with MCL for arsenic	10/27/2017 7:03 AM
18	Over regulation.	10/27/2017 5:50 AM
19	Debt collection	10/27/2017 5:30 AM
20	Surveys	10/26/2017 4:50 PM
21	our main lines are a/c pipes, and are over 40 years old	10/26/2017 4:05 PM
22	conservation program implementation, Leaks from external factors.	10/26/2017 3:49 PM
23	Emergency supply if ours fails for more than 24 hours.	6/4/2017 8:04 AM

Q63 Please provide your comments on any area of Technical, Managerial, or Financial Assistance that you would like to have available locally.

Answered: 8 Skipped: 66

#	RESPONSES	DATE				
1	On the question about rate structure, we are fully metered but charge a flat monthly rate.	11/30/2017 12:06 PM				
2	I support this initiative to raise awareness and abilities for Group A size associations and smaller to become more sustainable. As demands and expectations increase for more transparent water quality documentation and delivery, water systems need to be structured and professional in their management and operational duties. Having regional/local resources like PUD #1 work shops and personnel available to help educate and provide resources to generally volunteer led water system organizations will help us deliver safe drinking water to our members. Building a network between existing associations to help share best practices and possible resources would be helpful. Thank you to the people and entities supporting this initiative.	11/30/2017 2:41 AM				
3	Just recently made contact with Dave Olson at Water System Services for some technical guidance, just need to set in motion his recommendations.	11/7/2017 9:13 AM				
4	Thank you for reaching out to us with these possibilities!	10/27/2017 8:07 AM				
5	Practical advice on compliance with Cross Connection requirement and emergency backup supply in the event of a natural disaster. Help designing a rate system that reduces excessive water consumption.	10/27/2017 7:03 AM				
6	We have, in the past, borrowed money from Farm Homes	10/26/2017 4:05 PM				
7	Backflow prevention classes	10/26/2017 3:49 PM				
8	None	6/4/2017 8:04 AM				

Appendix 5

System Chlorination Requirements - CT6

AP5-System Chlorination Requirement - CT6_1E507D6C

County II	D #	Water System Name	WTP # WTP Nan Source #	SMA 1/2	Disinfection	Inorganics Removal	Fe/Mn Removal	Arsenic	Follows Other Treatment	GWR	Connected to SW	LTZESWTR	Other MCL	Purveyor Option	Sanitary Control Mitigation	Secondary Contaminant Policy	SWTR	Total Coliform Rule
Whatcom 0	9899 K	BELFERN WEST	09899001 Wells 1 & 01,02,03		х													
Whatcom 1	8418 E	DEER CREEK WATER ASSOCIATION	18418001 Wells 1 an 01,02,03		х		х							х				х
Whatcom 0	8255 M	DELTA GROCERY WATER SYSTEM	08255001 Well 1 01		х						х							
Whatcom 1	8800 K	DEMING WATER ASSOCIATION	18800001 SPRING # 101,02,03		х						х							
Whatcom 1	9890 Y	DOUBLE L MOBILE HOME PARK	19890001 WELL #1 01		х		х				х			х				
Whatcom 2	4164 2	EVERGREEN RETREAT MHP	24164001 Lower We 01		х						х							
Whatcom 3	0200 B	GUIDE MERIDIAN WATER ASSOCIATION	30200001 Wells 1, 2, 01,02,03,0	4,05	х						х							
Whatcom N	IP060 Y	N. CASCADES ENVRNMNT LEARNING CNTR	NP060001 DIABLO LK 01		х						х							
Whatcom 3	7797 C	NORTH LAKE SAMISH SHELL MARKET	37797001 WELL #1 01		х													х
Whatcom 6	2000 A	NORTHWEST WATER ASSOCIATION, INC	62000001 Wells 1, 2, 01,02,03,0	4,06	х										х			х
Whatcom 2	9746 N	OWNERS ASSOC OF BEACH CLUB CONDOS	29746001 Well 3 03		х					х								х
Whatcom 5	2681 M	PLANTATION RANGE	52681001 UNNAMEE 01		х						х							
Whatcom 7	1290 V	RATHBONE PARK WATER ASSOC	71290001 Wells 3, 4, 03,04,05,0	6	х													х
Whatcom N	IP160 3	ROSS LAKE RESORT	NP160001 UNNAMEE 01		х						х							
Whatcom 1	5064 Y	SAMISH PARK	15064001 SAMISH SF01		х						х							
Whatcom 7	9800 U	SKOOKUM CHUCK WATER ASSOCIATION	79800001 Well 2 Hui 02		х													х
Whatcom 7	9800 U	SKOOKUM CHUCK WATER ASSOCIATION	79800002 Van Dyk W03,04,05,0	6	х													х
Whatcom A	A034 C	SLAVIC GOSPEL CHURCH WATER SYSTEM	aa034001 Well 1 01		х				х		х							х
Whatcom 5	6821 L	STARVIN-SAM S NO 19/SLATER ROAD WS	56821001 Well 2 02		х									x				
Whatcom 0	5754 K	UPPER BAKER	05754001 Spring & V 01		х						х							
Whatcom 5	6831 V	VICENTE FARMS & SONS ENTERPRISE	56831001 Well 01		х					х								
AP5-System Chlorination Requirement - CT6_1E507D6C

County ID #	Water System Name	urchased SW	mproves efffectiveness of treatment	Disinfection T	Beo'd	Distribution/Entry to Dist requiremen	4-log	Res regid	adings requi	adings renor	Reporting	Watch List
Whatcom 09899 K	BELFERN WEST	<u>u</u>		Hypochlor	Y	entry	4 log	0.5	28	28	Y	Jan-16
Whatcom 18418 E	DEER CREEK WATER ASSOCIATION			Erosion/Ta	Y	entry	4 log	0.4	28	22	Y	
Whatcom 08255 M	DELTA GROCERY WATER SYSTEM			Hypochlor	Y	entry	4 log	0.2	20	28	Y	Jan-16
Whatcom 18800 K	DEMING WATER ASSOCIATION			Hypochlor	Y	entry	4 log	0.2	20	28	Y	
Whatcom 19890 Y	DOUBLE L MOBILE HOME PARK			Hypochlor	Y	entry	4 log	0.4	20	28	Y	
Whatcom 24164 2	EVERGREEN RETREAT MHP			Hypochlor	Y	entry	4 log	0.6	20	28	Y	Jan-16
Whatcom 30200 B	GUIDE MERIDIAN WATER ASSOCIATION			Hypochlor	Y	entry	4 log	0.35	20	20	Y	
Whatcom NP060 Y	N. CASCADES ENVRNMNT LEARNING CNTR			Hypochlor	Y	entry	4 log	0.2	12?	12 to 28	Y	
Whatcom 37797 C	NORTH LAKE SAMISH SHELL MARKET			Hypochlor	Y	entry	4 log	1	28	28	Y	Jan-16
Whatcom 62000 A	NORTHWEST WATER ASSOCIATION, INC			Hypochlor	Y	entry	4 log	0.35	28	22	Y	
Whatcom 29746 N	OWNERS ASSOC OF BEACH CLUB CONDOS			Hypochlor	Y	entry	4 log	0.3	20	28	Y	Jan-16
Whatcom 52681 M	PLANTATION RANGE			Hypochlor	Y	entry	4 log	0.6	20	24	Y	Jan-16
Whatcom 71290 V	RATHBONE PARK WATER ASSOC			Hypochlor	Y	dist	4 log	0.33	28	0	N	
Whatcom NP160 3	ROSS LAKE RESORT			Hypochlor	Y	entry	4 log	0.38	20	28	Y	
Whatcom 15064 Y	SAMISH PARK			Hypochlor	Y	entry	4 log	0.2	20	28	Y	Jan-16
Whatcom 79800 U	SKOOKUM CHUCK WATER ASSOCIATION			Hypochlor	Y	entry	4 log	0.3	28	28	Y	Jan-16
Whatcom 79800 U	SKOOKUM CHUCK WATER ASSOCIATION			Hypochlor	Y	entry	4 log	0.2	20	22	Y	Jan-16
Whatcom AA034 C	SLAVIC GOSPEL CHURCH WATER SYSTEM			Hypochlor	Y	dist	4 log	0.2	0	4	N	Jan-16
Whatcom 56821 L	STARVIN-SAM S NO 19/SLATER ROAD WS			Hypochlor	Y	entry	4 log	1	20	20	Y/N	
Whatcom 05754 K	UPPER BAKER			Hypochlor	Y	entry	4 log	0.6	20	28	Y	Jan-16
Whatcom 56831 V	VICENTE FARMS & SONS ENTERPRISE			Hypochlor	Y	entry	4 log	0.3	28	20	Y	Jan-16

Missing Chlorination Reports

COLONIAL CREEK CAMPGROUND

GOODELL CAMPGROUND

00119

00119

00601

00638

01109

01468

02011

02395

04048

05370

05875

07028

07300

07507

08225

12112

12150

15510

23480

24151

24717

24840

24850

31355

33364

35216

44540

49890

50900

56829

56900

57027

58864 61350

61494

62000

62150

63350

66110

66110

66110

67020

68350

68350

73750

74705

76105

76105

87772

91650

95700

95900

96888

AB234

AB638

AB912

AC316

AC669

NP012

NP120

NP310

WaterSystemID WaterSystemName MissingRptsFor KONTREE APARTMENTS WATER SYSTEM , Jan/2016, Feb/2016, Mar/2016, Apr/2016, May/2016, Jun/2016 KONTREE APARTMENTS WATER SYSTEM , Jan/2016, Feb/2016, Mar/2016, Apr/2016, May/2016, Jun/2016 CENTURY WATER ASSOCIATION Jan/2015, Feb/2015, Mar/2015, Apr/2015, May/2015, Jun/2015, Jun/2015, Aug/2015, Sep/2015, Oct/2015, Nov/2015, Dec/2015, Jan/2016, Feb/2016, Mar/2016, Apr/2016, May/2016, Jun/2016 GRANDVIEW-NORTHGATE INDUSTRIAL PARK . Dec/2015 ARCO AM/PM (FAC 5840) Jan/2015, Feb/2015, Mar/2015, Apr/2015, May/2015, Jun/2015, Jul/2015, Aug/2015, Sep/2015, Oct/2015, Nov/2015, Dec/2015, Jan/2016, Feb/2016, Mar/2016, Apr/2016, May/2016, Jun/2016 MOUNT BAKER SCHOOL DISTRICT-DEMING , May/2016 Jan/2015, Feb/2015, Mar/2015, Feb/2016, Mar/2016, Apr/2016, May/2016, Jun/2016 CALMAN JAMES L Jan/2015, Feb/2015, Mar/2015, Apr/2015, May/2015, Jun/2015, Jul/2015, Aug/2015, Sep/2015, Oct/2015, Nov/2015, Dec/2015 Birch Bay Square Water Operation MOUNTAIN VIEW KINGDOM HALL WS Jan/2015, Feb/2015, Mar/2015, Apr/2015, May/2015, Jun/2015, Jun/2015, Aug/2015, Sep/2015, Oct/2015, Nov/2015, Dec/2015, Jan/2016, Feb/2016, Mar/2016, Apr/2016, May/2016, Jun/2016 BELFERN WATER ASSOCIATION Jan/2015, Feb/2015, Mar/2015, Apr/2015, May/2015, Jun/2015, Jun/2015, Aug/2015, Sep/2015, Oct/2015, Nov/2015, Dec/2015, Jan/2016, Feb/2016, Mar/2016, Apr/2016, May/2016, Jun/2016 BERTHUSEN ROAD WATER ASSOCIATION , Jun/2016 CORNWALL CHURCH OF GOD W.S. , May/2015, Jun/2015, Jul/2015, Aug/2015, Nov/2015, Jan/2016, Feb/2016 Jan/2015, Feb/2015, Mar/2015, Apr/2015, May/2015, Jun/2015, Jun/2015, Aug/2015, Sep/2015, Oct/2015, Nov/2015, Dec/2015, Jan/2016, Feb/2016, Mar/2016, Apr/2016, May/2016, Jun/2016 BLAINE CITY OF NORTHWEST MOBILE HOME PARK , Nov/2015, Dec/2015, Jan/2016, Feb/2016, Mar/2016, Apr/2016, May/2016, Jun/2016 KENDALL ELEMENTARY SCHOOL , Aug/2015, Jun/2016 CEDAR LYNN WATER ASSOC , Apr/2015, Jun/2016 CENTRAL CITY WATER ASSOCIATION Jan/2015, Feb/2015, Mar/2015, Apr/2015, May/2015, Jun/2015, Jun/2015, Aug/2015, Sep/2015, Oct/2015, Nov/2015, Dec/2015, Jan/2016, Feb/2016, Mar/2016, Apr/2016, May/2016, Jun/2016, Sep/2015, Oct/2015, Nov/2015, Dec/2015, Jan/2016, Feb/2016, Mar/2016, May/2016, Jun/2016, Jun/2016, Sep/2015, Oct/2015, Nov/2015, Dec/2015, Jan/2016, Feb/2016, Mar/2016, Mar/2016, Mar/2016, Jun/2016, Jun/2016, Sep/2015, Oct/2015, Nov/2015, Dec/2015, Jan/2016, Feb/2016, Mar/2016, Mar/2016, Mar/2016, Mar/2016, Mar/2016, Mar/2016, Jun/2016, Jun/2016, Sep/2015, Oct/2015, Nov/2015, Dec/2015, Jun/2016, Feb/2016, Mar/2016, Mar/20 COUNTRY HAVEN WATER ASSOC Jan/2015, Feb/2015, Mar/2015, Apr/2015, May/2015, Jun/2015, Jul/2015, Aug/2015, Sep/2015, Oct/2015, Nov/2015, Dec/2015, Jan/2016, Feb/2016, Mar/2016, Apr/2016, May/2016, Jun/2016 ENTERPRISE ESTATES WATER ASSOC. Jan/2015, Feb/2015, Mar/2015, Apr/2015, May/2015, Jun/2015, Jun/2015, Aug/2015, Sep/2015, Oct/2015, Nov/2015, Dec/2015, Jan/2016, Feb/2016, Mar/2016, Apr/2016, May/2016, Jun/2016 **EVERGREEN MOBILE PARK & SALES** Jan/2015, Feb/2015, Mar/2015, Apr/2015, May/2015, Jun/2015, Jun/2015, Aug/2015, Sep/2015, Oct/2015, Nov/2015, Dec/2015, Jan/2016, Feb/2016, Mar/2016, Apr/2016, May/2016, Jun/2016 FAZON ROAD WATER ASSOCIATION . Mav/2015. Dec/2015 FERNDALE MOBILE VILLAGE , Sep/2015, Oct/2015, Nov/2015, Dec/2015, Jan/2016, Feb/2016, Mar/2016, Apr/2016, May/2016, Jun/2016 FERNDALE , Sep/2015 , Jun/2016 HARMONY GRADE SCHOOL HILLTOP WATER OWNERS ASSOCIATION Jan/2015, Feb/2015, Mar/2015, Apr/2015, May/2015, Jul/2015, Jul/2015, Aug/2015, Sep/2015, Oct/2015, Nov/2015, Dec/2015, Jan/2016, Feb/2016, Mar/2016, Apr/2016, May/2016, Jun/2016 LYNDEN B.S.-GSA, BELLINGHAM PMT Jan/2015, Feb/2015, Mar/2015, Apr/2015, May/2015, Jun/2015, Jun/2015, Aug/2015, Sep/2015, Oct/2015, Nov/2015, Dec/2015, Jan/2016, Feb/2016, Mar/2016, Apr/2016, May/2016, Jun/2016 LAKE SAMISH TERRACE PARK Jan/2015, Feb/2015, Mar/2015, Apr/2015, May/2015, Jun/2015 MABERRY PACKING LLC Jan/2015, Feb/2015, Mar/2015, Apr/2015, May/2015, Jul/2015, Jul/2015, Aug/2015, Sep/2015, Oct/2015, Nov/2015, Dec/2015, Jan/2016, Feb/2016, Mar/2016, Apr/2016, May/2016, Jun/2016 MANTHEYS COUNTRY MOBILE PARK Jan/2015, Feb/2015, Mar/2015, Apr/2015, May/2015, Jun/2015, Jun/2015, Aug/2015, Sep/2015, Oct/2015, Nov/2015, Dec/2015, Jan/2016, Feb/2016, Mar/2016, Apr/2016, May/2016, Jun/2016 RADER FARMS LABOR CAMP Jan/2015, Feb/2015, Mar/2015, Apr/2015, May/2015, Jun/2015, Jun/2015, Aug/2015, Sep/2015, Oct/2015, Nov/2015, Dec/2015, Jan/2016, Feb/2016, Mar/2016, Apr/2016, May/2016, Jun/2016 MOUNTAIN VIEW WATER ASSOCIATION . Feb/2015, Mar/2015, Apr/2015, May/2015, Sep/2015, Jan/2016, Feb/2016 Camp Saturna Jan/2015, Feb/2015, Mar/2015, Apr/2015, Jun/2015, Jun/2015, Jun/2015, Aug/2015, Sep/2015, Oct/2015, Nov/2015, Dec/2015, Jan/2016, Feb/2016, Mar/2016, Apr/2016, Mar/2016, Jun/2016, Jun/20 STARVIN SAM S #15 KENDALL WATER SYS Jan/2015, Feb/2015, Mar/2015, Apr/2015, May/2015, Jun/2015, Jun/2015, Aug/2015, Sep/2015, Oct/2015, Nov/2015, Dec/2015, Jan/2016, Feb/2016, Mar/2016, Apr/2016, May/2016, Jun/2016 NORTH STAR WATER ASSOC , Feb/2016 WISER LAKE KINGDOM HALL JEHOVAHS Jan/2015, Feb/2015, Mar/2015, Apr/2015, May/2015, Jun/2015, Jun/2015, Aug/2015, Sep/2015, Oct/2015, Nov/2015, Dec/2015, Jan/2016, Feb/2016, Mar/2016, Apr/2016, May/2016, Jun/2016 NORTHWEST WATER ASSOCIATION INC Jan/2015, Feb/2015, Mar/2015, Apr/2015, May/2015, Jun/2015, Jul/2015, Aug/2015, Sep/2015, Oct/2015, Nov/2015, Dec/2015, Jan/2016, Feb/2016, Mar/2016, Apr/2016, May/2016, Jun/2016 NORTHWOOD WATER ASSOCIATION . Jun/2016 OLD SETTLERS WATER ASSOCIATION Jan/2015, Feb/2015, Mar/2015, Apr/2015, May/2015, Jun/2015, Jun/2015, Aug/2015, Sep/2015, Oct/2015, Nov/2015, Dec/2015, Jan/2016, Feb/2016, Mar/2016, Apr/2016, May/2016, Jun/2016 Columbia Valley Water District , Aug/2015, Nov/2015 Columbia Valley Water District , Aug/2015, Nov/2015 Columbia Valley Water District , Aug/2015, Nov/2015 PERCIE ROAD WATER ASSOCIATION Jan/2015, Feb/2015, Mar/2015, Apr/2015, May/2015, Jun/2015, Jul/2015, Aug/2015, Sep/2015, Oct/2015, Nov/2015, Dec/2015 POLE ROAD WATER ASSOCIATION Jan/2015, Feb/2015, Mar/2015, Apr/2015, May/2015, Jun/2015, Jul/2015, Aug/2015, Sep/2015, Oct/2015, Nov/2015, Dec/2015, Jan/2016, Feb/2016, Mar/2016, Apr/2016, May/2016, Jun/2016 POLE ROAD WATER ASSOCIATION Jan/2015, Feb/2015, Mar/2015, Apr/2015, Jun/2015, Jun/2015, Jun/2015, Aug/2015, Sep/2015, Oct/2015, Nov/2015, Dec/2015, Jan/2016, Feb/2016, Mar/2016, Apr/2016, Mar/2016, Jun/2016, Jun/20 ROEDERLAND WATER ASSOCIATION Jan/2015, Feb/2015, Mar/2015, Apr/2015, May/2015, Jun/2015, Jun/2015, Aug/2015, Sep/2015, Oct/2015, Nov/2015, Dec/2015, Jan/2016, Feb/2016, Mar/2016, Apr/2016, May/2016, Jun/2016 ROYAL COACHMAN MOBIL EST . Nov/2015 SANDY POINT IMPROVEMENT CO Jan/2015, Feb/2015, Mar/2015, Apr/2015, May/2015, Jun/2015, Jun/2015, Aug/2015, Sep/2015, Oct/2015, Nov/2015, Dec/2015, Jan/2016, Feb/2016, Mar/2016, Apr/2016, May/2016, Jun/2016 SANDY POINT IMPROVEMENT CO Jan/2015, Feb/2015, Mar/2015, Apr/2015, May/2015, Jun/2015, Jun/2015, Aug/2015, Sep/2015, Oct/2015, Nov/2015, Dec/2015, Jan/2016, Feb/2016, Mar/2016, Apr/2016, May/2016, Jun/2016, Jun/2016, Sep/2015, Oct/2015, Nov/2015, Dec/2015, Jan/2016, Feb/2016, Mar/2016, Mar/20 GLEN COMMUNITY ASSOCIATION , Sep/2015 VICTOR WATER ASSOCIATION , Nov/2015, Feb/2016 WHATCOM COUNTY WATER DIST #2 , Jan/2016 WHATCOM COUNTY WATER DIST #7 , Jun/2016 , Jun/2016 Wildwood Resort Condo Assn WS MERIDIAN SCHOOL COMPLEX , Jul/2015, Aug/2015 Ostrom Mushroom Farm Water System Jan/2015, Feb/2015, Mar/2015, Apr/2015, May/2015, Jun/2015, Jun/2015, Aug/2015, Sep/2015, Oct/2015, Nov/2015, Dec/2015, Jan/2016, Feb/2016, Mar/2016, Apr/2016, May/2016, Jun/2016 Deer Creek Water Assn/Guide South Jan-15 North Fork Comm Library - Kendall , Feb/2015 Jan/2015, Feb/2015, Mar/2015, Apr/2015, May/2015, Jul/2015, Jul/2015, Aug/2015, Sep/2015, Oct/2015, Nov/2015, Dec/2015, Jan/2016, Feb/2016, Mar/2016, Apr/2016, May/2016, Jun/2016 Ellis Dentistry Water System NEWHALEM CAMPGROUND & VISITOR CTR Jan/2015, Feb/2015, Mar/2015, Apr/2015, Nov/2015, Dec/2015, Jan/2016, Feb/2016, Mar/2016

Jan/2015, Feb/2015, Mar/2015, Apr/2015, Oct/2015, Nov/2015, Dec/2015, Jan/2016, Feb/2016, Mar/2016, Apr/2016

Jan/2015, Feb/2015, Mar/2015, Apr/2015, Nov/2015, Dec/2015, Jan/2016, Feb/2016, Mar/2016, Apr/2016

1

Operating Permit Status

WSID	WSName	Grp/Type	OwnNum SMA	Num	Color	IssueDate	Grp/Typ
00250 J	ACME WATER DISTRICT NO 18	A-Comm	000015		Green	9/1/2016	Substantially In Compliance
00496 X	AGATE BAY TRAILER PARK	A-Comm	031520		Green	9/1/2016	Substantially In Compliance
01200 A	ALDERGROVE WATER ASSOC.	A-Comm	000066		Green	9/1/2016	Substantially In Compliance
18237 6	ANDERSON CREEK LODGE INC	A-NTNC	009965 12	26	Green	12/1/2015	Substantially In Compliance
02300 H	ANDERSON CREEK WATER ASSOCIATION	A-Comm	000146		Blue	9/1/2016	Lacks Design Approval
01109 U	ARCO AM/PM (FAC 5840)	A-TNC	033687		Green	12/1/2015	Substantially In Compliance
04050 J	BAKER VIEW WATER ASSOC	A-Comm	000292		Blue	9/1/2016	Lacks Design Approval
06429 2	BARLEAN S WATER SYSTEM	A-NTNC	019823 12	26	Green	12/1/2015	Substantially In Compliance
05370 H	BELFERN WATER ASSOCIATION	A-Comm	000407		Green	9/1/2016	Substantially In Compliance
09899 K	BELFERN WEST	A-Comm	009011		Green	9/1/2016	Substantially In Compliance
054504	BELL BAY JACKSON WATER ASSOCIATION	A-Comm	000413		Green	9/1/2016	Substantially In Compliance
05600 3	BELLINGHAM-WATER DIVISION, CITY OF	A-Comm	000415		Green	6/1/2016	Substantially In Compliance
05875 Q	BERTHUSEN ROAD WATER ASSOCIATION	A-Comm	000444		Green	9/1/2016	Substantially In Compliance
02395 D	Birch Bay Square Water Operation	A-NTNC	035152		Green	12/1/2015	Substantially In Compliance
95904 U	BIRCH BAY WATER & SEWER DISTRICT	A-Comm	006568		Green	6/1/2016	Substantially In Compliance
07227 U	BLACK MOUNTAIN RANCH	A-TNC	000518		Green	12/1/2015	Substantially In Compliance
07300 U	BLAINE, CITY OF	A-Comm	000524		Green	6/1/2016	Substantially In Compliance
59379 K	Blue Mountain Grill Water System	A-TNC	032028		Blue	12/1/2015	Lacks Design Approval
AB395 E	BOXX BERRY FARM WATER SYSTEM	A-TNC	032017		Green	12/1/2015	Substantially In Compliance
02011 W	CALMAN JAMES L.	A-Comm	008137		Green	9/1/2016	Substantially In Compliance
10562 8	CALMOR COVE CLUB	A-Comm	000768		Blue	9/1/2016	Lacks Design Approval
12641 F	CAMP LUTHERWOOD	A-TNC	009370		Green	12/1/2015	Substantially In Compliance
12112 K	CEDAR LYNN WATER ASSOC	A-Comm	000970		Blue	9/1/2016	Lacks Design Approval
12150 K	CENTRAL CITY WATER ASSOCIATION	A-Comm	000974		Green	9/1/2016	Substantially In Compliance
00601 9	CENTURY WATER ASSOCIATION	A-Comm	007750		Green	9/1/2016	Substantially In Compliance
01383 2	CHUCKANUT TRAILS WATER SYSTEM	A-Comm	015894		Green	9/1/2016	Substantially In Compliance
NP120 2	COLONIAL CREEK CAMPGROUND	A-TNC	007209		Green	3/1/2016	Substantially In Compliance
66110 Y	Columbia Valley Water District	A-Comm	004409 12	26	Green	6/1/2016	Substantially In Compliance
AA460 E	CORNERSTONE CHRISTIAN SCHOOL W.S.	A-NTNC	030052		Green	12/1/2015	Substantially In Compliance
AA553 E	CORNERSTONE COMMUNITY CHURCH	A-TNC	031183		Green	12/1/2015	Substantially In Compliance
07028 3	CORNWALL CHURCH OF GOD W.S.	A-NTNC	021352		Green	12/1/2015	Substantially In Compliance
155108	COUNTRY HAVEN WATER ASSOC	A-Comm	001253		Blue	9/1/2016	Lacks Design Approval
15596 D	COVENANT CHRISTIAN SCHOOL	A-NTNC	007828		Green	12/1/2015	Substantially In Compliance
17050 R	Custer Water Association	A-Comm	001369		Green	9/1/2016	Substantially In Compliance
AC765 H	Dakota Creek Golf Club Water System	A-TNC	034397		Blue	12/1/2015	Lacks Design Approval
AB912 G	Deer Creek Water Assn/Guide South	A-Comm	001452		Green	9/1/2016	Substantially In Compliance
18418 E	DEER CREEK WATER ASSOCIATION	A-Comm	001452		Green	6/1/2016	Substantially In Compliance
08255 M	DELTA GROCERY WATER SYSTEM	A-TNC	034144		Green	12/1/2015	Substantially In Compliance

WSID	WSName	Grp/Type	OwnNum SI	MANum	Color	IssueDate	Grp/Typ
18750 Q	DELTA WATER ASSOCIATION	A-Comm	001486		Yellow	9/1/2016	Significant Non-Complier w/ Agreement
567518	DEMING LOG SHOW & RV	A-TNC	013895		Blue	12/1/2015	Lacks Design Approval
18800 K	DEMING WATER ASSOC.	A-Comm	001491		Green	9/1/2016	Substantially In Compliance
19200 V	DIABLO WTR SYS-SEATTLE CITY LIGHT	A-Comm	001518		Green	9/1/2016	Substantially In Compliance
19570 2	DODSON IGA MARKET	A-TNC	001546		Blue	12/1/2015	Lacks Design Approval
19890 Y	DOUBLE L MOBILE HOME PARK	A-Comm	034739		Blue	9/1/2016	Lacks Design Approval
FS117 G	DOUGLAS FIR CAMPGROUND - EAST	A-TNC	002662		Blue	3/1/2016	Lacks Design Approval
FS119 J	DOUGLAS FIR CAMPGROUND - WEST	A-TNC	002662		Blue	3/1/2016	Lacks Design Approval
58951 M	EHLERS LABOR CAMP	A-TNC	014126		Blue	12/1/2015	Lacks Design Approval
22895 4	ELIZA ISLAND BEACH CLUB	A-TNC	001726		Green	12/1/2015	Substantially In Compliance
23480 U	ENTERPRISE ESTATES WATER ASSOC.	A-Comm	001776		Green	9/1/2016	Substantially In Compliance
23485 D	ENTERPRISE TERRACE WATER ASSN.	A-Comm	001777		Green	9/1/2016	Substantially In Compliance
24151 8	EVERGREEN MOBILE PARK & SALES	A-Comm	001824		Blue	9/1/2016	Lacks Design Approval
24164 2	EVERGREEN RETREAT MHP	A-Comm	001834	126	Green	9/1/2014	Substantially In Compliance
24195 B	EVERSON WATER ASSOC	A-Comm	001843		Green	9/1/2016	Substantially In Compliance
24200 K	EVERSON, CITY OF	A-Comm	001844		Green	6/1/2016	Substantially In Compliance
07622 R	EVERYBODYS STORE	A-TNC	020749		Blue	12/1/2015	Lacks Design Approval
FS146 N	Excelsior Group Site Campground WS	A-TNC	002662		Green	3/1/2016	Substantially In Compliance
02601 D	FAIRFIELD MHP	A-Comm	002343		Green	9/1/2016	Substantially In Compliance
24850 M	FERNDALE	A-Comm	001896		Green	6/1/2016	Substantially In Compliance
24840 C	FERNDALE MOBILE VILLAGE	A-Comm	001895	126	Green	9/1/2016	Substantially In Compliance
25610 D	FLEMINGS PLATT WATER ASSOCIATION	A-Comm	001967		Blue	9/1/2016	Lacks Design Approval
27450 A	GEORGIA MANOR WATER ASSOC	A-Comm	002125		Green	9/1/2016	Substantially In Compliance
27755 9	GLACIER SPRINGS WATER SYSTEM	A-Comm	002155		Green	12/1/2015	Substantially In Compliance
95915 L	GLACIER WATER DISTRICT	A-Comm	006573		Green	6/1/2016	Substantially In Compliance
87772 E	GLEN COMMUNITY ASSOCIATION	A-TNC	005985		Green	12/1/2015	Substantially In Compliance
27950 Y	Glen Cove Water Association	A-Comm	002165		Green	9/1/2016	Substantially In Compliance
28050 V	GLENHAVEN LAKES CLUB	A-Comm	002168		Green	6/1/2016	Substantially In Compliance
NP310 2	GOODELL CAMPGROUND	A-TNC	007209		Blue	3/1/2016	Exceeds Approved Connections
289501	GRANDVIEW BEACH WATER ASSOC INC	A-Comm	002231		Green	9/1/2016	Substantially In Compliance
00638 N	GRANDVIEW-NORTHGATE INDUSTRIAL PARK	A-NTNC	015268		Green	12/1/2015	Substantially In Compliance
30200 B	GUIDE MERIDIAN WATER ASSOCIATION	A-Comm	002341		Green	9/1/2016	Substantially In Compliance
30800 4	HAMPTON WATER ASSOCIATION	A-Comm	002391		Blue	9/1/2016	Lacks Design Approval
31355 D	HARMONY GRADE SCHOOL	A-NTNC	002430		Green	12/1/2015	Substantially In Compliance
32350 W	HEMMI ROAD WATER ASSOCIATION	A-Comm	002499		Green	9/1/2016	Substantially In Compliance
33364 9	HILLTOP WATER OWNERS ASSOCIATION	A-Comm	002566		Green	9/1/2016	Substantially In Compliance
FS377 F	HORSESHOE COVE CAMPGROUND	A-TNC	002662		Blue	3/1/2016	Lacks Design Approval
NP370 L	HOZOMEEN WATER SYSTEM	A-TNC	007209		Green	3/1/2016	Substantially In Compliance

WSID	WSName	Grp/Type	OwnNum SMANu	m Color	IssueDate	Grp/Typ
56799 D	Il Caffe Rifugio Water System	A-TNC	033079	Green	12/1/2015	Substantially In Compliance
07087 4	INFRA PACIFIC WATER SYSTEM	A-NTNC	020387	Green	12/1/2015	Substantially In Compliance
35800 E	Intalco Aluminum Corporation WS	A-NTNC	002750	Green	12/1/2015	Substantially In Compliance
36268 D	ISLE AIRE BEACH ASSOCIATION	A-Comm	002773	Green	9/1/2016	Substantially In Compliance
379500	KELLY ROAD WATER ASSOCIATION	A-Comm	002930	Blue	9/1/2016	Exceeds Approved Connections
08225 V	KENDALL ELEMENTARY SCHOOL	A-NTNC	002430	Green	12/1/2015	Substantially In Compliance
001191	KONTREE APARTMENTS WATER SYSTEM	A-Comm	035316	Blue	9/1/2016	Lacks Design Approval
44540 2	LAKE SAMISH TERRACE PARK	A-Comm	003181 163	Green	9/1/2016	Substantially In Compliance
44950 U	LAKE TERRILL WATER ASSOC	A-Comm	003188	Green	9/1/2016	Substantially In Compliance
46300 W	LAUREL WEST WATER ASSOCIATION	A-Comm	003275	Blue	9/1/2016	Lacks Design Approval
43290 W	LISECC	A-Comm	003112	Green	9/1/2016	Substantially In Compliance
29014 Y	LOUIE, JOE WATER ASSOCIATION	A-Comm	011187	Green	9/1/2016	Substantially In Compliance
48875 2	LUMMI POINT WATER ASSOCIATION	A-TNC	009543	Green	12/1/2015	Substantially In Compliance
52957 B	LWWSD - AGATE HEIGHTS	A-Comm	006570	Green	9/1/2016	Substantially In Compliance
08118 1	LWWSD - EAGLERIDGE	A-Comm	006570	Green	9/1/2016	Substantially In Compliance
959101	LWWSD - SOUTH SHORE WATER SYSTEM	A-Comm	006570	Green	6/1/2016	Substantially In Compliance
352161	LYNDEN B.SGSA, BELLINGHAM PMT	A-TNC	011885	Blue	12/1/2015	Lacks Design Approval
491504	LYNDEN WATER DEPARTMENT	A-Comm	003505	Green	6/1/2016	Substantially In Compliance
49890 2	MABERRY PACKING LLC	A-TNC	013145	Blue	12/1/2015	Lacks Design Approval
50900 A	MANTHEYS COUNTRY MOBILE PARK	A-Comm	003572	Blue	9/1/2016	Lacks Design Approval
51100 B	MAPLE FALLS WATER COOP	A-Comm	003576	Green	9/1/2016	Substantially In Compliance
53250 W	MEADOWBROOK WATER ASSOCIATION	A-Comm	003717	Green	9/1/2016	Substantially In Compliance
AB234 J	MERIDIAN SCHOOL COMPLEX	A-NTNC	013470	Green	12/1/2015	Substantially In Compliance
25601 N	Mount Baker Bibleway Camp	A-TNC	010829	Blue	12/1/2015	Lacks Design Approval
56874 E	MOUNT BAKER MOBILE HOME PARK	A-Comm	014109	Blue	9/1/2016	Lacks Design Approval
01468 8	MOUNT BAKER SCHOOL DISTRICT-DEMING	A-NTNC	002430	Green	12/1/2015	Substantially In Compliance
01357 B	MOUNT BAKER SKI AREA - WHITE SALMON	A-TNC	015869	Blue	12/1/2015	Exceeds Approved Connections
56500 6	MOUNT BAKER WATER ASSOCIATION	A-Comm	003914	Green	9/1/2016	Substantially In Compliance
57671 P	MOUNTAIN VIEW BUSINESS PARK	A-TNC	035426	Green	12/1/2015	Substantially In Compliance
04048 D	MOUNTAIN VIEW KINGDOM HALL WS	A-TNC	018058	Blue	12/1/2015	Lacks Design Approval
56900 P	MOUNTAIN VIEW WATER ASSOCIATION	A-Comm	003946	Green	9/1/2016	Substantially In Compliance
15676 1	MT BAKER SKI AREA HEATHER MEADOWS	A-TNC	009623	Green	12/1/2015	Substantially In Compliance
NP060 Y	N. CASCADES ENVRNMNT LEARNING CNTR	A-TNC	007209	Green	3/1/2016	Substantially In Compliance
589504	NEPTUNE BEACH WATER ASSOC	A-Comm	004020	Blue	9/1/2016	Lacks Design Approval
NP012 P	NEWHALEM CAMPGROUND & VISITOR CTR	A-TNC	007209	Blue	3/1/2016	Lacks Design Approval
59250 9	NEWHALEM WATER SYSTEM	A-Comm	001518	Green	9/1/2016	Substantially In Compliance
59850 2	NOOKSACK VALLEY WATER ASSOCIATION	A-Comm	004065	Green	9/1/2016	Substantially In Compliance
59800 R	NOOKSACK WATER DEPT	A-Comm	004064	Green	9/1/2016	Substantially In Compliance

WSID	WSName	Grp/Type	OwnNum SM	ANum	Color	IssueDate	Grp/Typ
04235 V	NORTH BELLINGHAM GOLF COURSE	A-TNC	018115		Green	12/1/2015	Substantially In Compliance
57675 R	North County Christ The King Church	A-TNC	033808		Green	12/1/2015	Substantially In Compliance
AC316 6	North Fork Comm Library - Kendall	A-TNC	033659		Green	12/1/2015	Substantially In Compliance
57591 3	NORTH FORK WATER SYSTEM	A-TNC	014034		Blue	12/1/2015	Exceeds Approved Connections
37797 C	NORTH LAKE SAMISH SHELL MARKET	A-TNC	012139		Green	12/1/2014	Substantially In Compliance
61350 X	NORTH STAR WATER ASSOC	A-Comm	004112		Blue	9/1/2016	Exceeds Approved Connections
07507 P	NORTHWEST MOBILE HOME PARK	A-Comm	034899		Blue	9/1/2016	Lacks Design Approval
62000 A	NORTHWEST WATER ASSOCIATION, INC	A-Comm	004147		Green	9/1/2016	Substantially In Compliance
62135 T	NORTHWOOD PARK SYSTEM	A-Comm	004150		Blue	9/1/2016	Significant Non-Complier w/ Agreement
62150 Q	NORTHWOOD WATER ASSOCIATION	A-Comm	004151		Yellow	9/1/2016	Significant Non-Complier w/ Agreement
63350 2	OLD SETTLERS WATER ASSOCIATION	A-Comm	004224		Green	9/1/2016	Substantially In Compliance
64150 V	ORCHARD WATER ASSOC	A-Comm	004290		Green	9/1/2016	Substantially In Compliance
AB638 C	Ostrom Mushroom Farm Water System	A-NTNC	004308		Green	12/1/2015	Substantially In Compliance
29746 N	OWNERS ASSOC OF BEACH CLUB CONDOS	A-TNC	011232		Green	12/1/2015	Substantially In Compliance
02197 6	PARADISE MARKET 1	A-TNC	033972		Green	12/1/2015	Substantially In Compliance
66116 2	PARADISE PARK WATER SYSTEM	A-Comm	004410		Green	9/1/2016	Substantially In Compliance
67020 5	PERCIE ROAD WATER ASSOCIATION	A-Comm	004507		Green	9/1/2016	Substantially In Compliance
55450 9	Phillips 66 Company	A-NTNC	034542		Green	12/1/2015	Substantially In Compliance
52681 M	PLANTATION RANGE	A-TNC	013475		Blue	12/1/2015	Lacks Design Approval
67900 T	PLEASANT VALLEY WATER SYSTEM	A-Comm	004593		Green	9/1/2016	Substantially In Compliance
95750 T	POINT ROBERTS WATER DISTRICT NO 4	A-Comm	006565		Green	6/1/2016	Substantially In Compliance
68350 C	POLE ROAD WATER ASSOCIATION	A-Comm	004613		Green	6/1/2016	Substantially In Compliance
56829 Q	RADER FARMS LABOR CAMP	A-TNC	034361		Blue	12/1/2015	Lacks Design Approval
27631 K	RASPBERRY RIDGE WATER ASSOCIATION	A-Comm	011100		Green	9/1/2016	Substantially In Compliance
71290 V	RATHBONE PARK WATER ASSOC	A-Comm	004792		Yellow	9/1/2016	Significant Non-Complier w/ Agreement
08495 X	RIVER OF LIFE COMMUNITY CHURCH	A-TNC	021461		Blue	12/1/2015	Lacks Design Approval
72800 C	RIVER RD WATER ASSOCIATION	A-Comm	004898		Green	9/1/2016	Substantially In Compliance
73750 L	ROEDERLAND WATER ASSOCIATION	A-Comm	004977	163	Blue	9/1/2016	Lacks Design Approval
NP1603	ROSS LAKE RESORT	A-TNC	007209		Blue	3/1/2016	Lacks Design Approval
74705 Y	ROYAL COACHMAN MOBIL EST	A-Comm	005030		Green	9/1/2016	Substantially In Compliance
15064 Y	SAMISH PARK	A-TNC	013475		Blue	12/1/2015	Lacks Design Approval
76105 A	SANDY POINT IMPROVEMENT CO	A-Comm	005135		Green	6/1/2016	Substantially In Compliance
FS020 6	SHANNON CREEK CAMPGROUND	A-TNC	002662		Blue	3/1/2016	Lacks Design Approval
FS843 9	Silver Fir Campground East	A-TNC	002662		Blue	3/1/2016	Lacks Design Approval
FS130 D	Silver Fir Campground West	A-TNC	002662		Blue	3/1/2016	Lacks Design Approval
52666 P	SILVER LAKE PARK - HORSE CAMP	A-TNC	013475		Blue	12/1/2015	Lacks Design Approval
52679 H	SILVER LAKE PARK - MAIN CAMPGROUND	A-TNC	013475		Blue	12/1/2015	Lacks Design Approval
79800 U	SKOOKUM CHUCK WATER ASSOCIATION	A-Comm	005426		Green	9/1/2016	Substantially In Compliance

WSID	WSName	Grp/Type	OwnNum SMA	Num C	Color	IssueDate	Grp/Typ
AA034 C	SLAVIC GOSPEL CHURCH	A-TNC	029224	H	Blue	12/1/2015	Lacks Design Approval
23011 1	SMALLWOOD SHORES WELL	A-TNC	010524	F	Blue	12/1/2015	Lacks Design Approval
805506	SMITH ROAD WATER ASSOCIATION	A-Comm	005471	F	Blue	9/1/2016	Lacks Design Approval
58864 A	STARVIN SAM S #15 KENDALL WATER SYS	A-TNC	014111	G	Green	12/1/2015	Substantially In Compliance
56821 L	STARVIN-SAM S NO 19/SLATER ROAD WS	A-TNC	035498	G	Green	12/1/2015	Substantially In Compliance
84850 U	SUMAS RURAL WATER ASSOCIATION	A-Comm	005728	G	Green	9/1/2016	Substantially In Compliance
84870 B	SUMAS WATER DEPT	A-Comm	005729	G	Green	9/1/2016	Substantially In Compliance
08353 Q	SUNRISE GROCERY STORE	A-TNC	030702	G	Green	12/1/2015	Substantially In Compliance
06514 B	SUNSET WATER & MAINTENANCE ASSOC	A-Comm	015922	G	Green	9/1/2016	Substantially In Compliance
86200 W	SUNSET WATER ASSOCIATION	A-Comm	005839	G	Green	9/1/2016	Substantially In Compliance
59394 H	Swift Creek Campground Water System	A-TNC	002662	G	Green	3/1/2016	Substantially In Compliance
87120 B	TALL CEDARS ESTATES WATER ASSOC.	A-Comm	005916	I	Blue	9/1/2016	Lacks Design Approval
AD051 A	The Cheese Farm	A-TNC	034874	G	Green	12/1/2015	Substantially In Compliance
08262 B	The Russell Group Water System	A-TNC	033385	G	Green	12/1/2015	Substantially In Compliance
88050 2	THORNTON WATER ASSOCIATION	A-Comm	006010	G	Green	9/1/2016	Substantially In Compliance
05754 K	UPPER BAKER	A-TNC	019367	I	Blue	12/1/2015	Lacks Design Approval
91000 B	VALLEY VIEW WATER ASSOC	A-Comm	006259	G	Green	9/1/2016	Substantially In Compliance
56831 V	VICENTE FARMS & SONS ENTERPRISE	A-TNC	021211	G	Green	9/1/2012	Substantially In Compliance
02153 3	VICENTE FARMS & SONS-MISSION	A-TNC	014106	I	Blue	9/1/2012	Lacks Design Approval
91650 D	VICTOR WATER ASSOCIATION	A-Comm	006290 16	63 <mark>I</mark>	Blue	9/1/2016	Exceeds Approved Connections
92150 U	WAHL WATER ASSOC	A-Comm	006342	I	Blue	9/1/2016	Exceeds Approved Connections
95700 H	WHATCOM COUNTY WATER DIST #2	A-Comm	006564	G	Green	6/1/2016	Substantially In Compliance
95900 R	WHATCOM COUNTY WATER DIST #7	A-Comm	006567	G	Green	6/1/2016	Substantially In Compliance
95914 3	WHATCOM COUNTY WATER DIST 13	A-Comm	006572	G	Green	9/1/2016	Substantially In Compliance
95935 4	WHATCOM MEADOWS	A-TNC	006574	G	Green	12/1/2015	Substantially In Compliance
96700 K	WICKERSHAM WATER ASSOCIATION	A-Comm	006628	I	Blue	9/1/2016	Lacks Design Approval
96888 W	Wildwood Resort Condo Assn WS	A-TNC	032027	G	Green	12/1/2015	Substantially In Compliance
971104	WILLEYS LAKE TERRACE WATER ASSN	A-Comm	006665	G	Green	9/1/2016	Substantially In Compliance
61494 5	WISER LAKE KINGDOM HALL JEHOVAHS	A-TNC	014432	G	Green	12/1/2015	Substantially In Compliance
99550 T	Y-SQUALICUM WATER ASSN	A-Comm	006815	G	Green	9/1/2016	Substantially In Compliance

Sample Exceedances: Nitrate, Lead & Copper, Coliform

		Source				Lab/Sample		Result				
WS ID	WSName	Number(s)	Test Panel	Analyte #	Analyte Name	Number	Collect Date	Range	Measure	UOM	Trigger	MCL
09899 K	BELFERN WEST	S03	NIT	0020	NITRATE-N	057 59330	02/02/2016	EQ	7.1	mg/L	Y	
09899 K	BELFERN WEST	S03	NIT	0020	NITRATE-N	057 61839	05/03/2016	EQ	8.5	mg/L	Y	
59379 K	Blue Mountain Grill Water System	Distr	COLI_AP	0001	TOTAL COLIFORM	164 07741	02/12/2016	EQ			Y	
59379 K	Blue Mountain Grill Water System	Distr	COLI_AP	0001	TOTAL COLIFORM	164 32164	06/15/2016	EQ			Y	
AA460	CORNERSTONE CHRISTIAN SCHOOL W.S.	S01	NIT	0020	NITRATE-N	174 18790	06/01/2016	EQ	6.7	mg/L	Y	
15510 8	COUNTRY HAVEN WATER ASSOC	S01	NIT	0020	NITRATE-N	057 59513	02/09/2016	EQ	5.9	mg/L	Y	
15510 8	COUNTRY HAVEN WATER ASSOC	S01	NIT	0020	NITRATE-N	057 61819	05/03/2016	EQ	5.6	mg/L	Y	
18750 Q	DELTA WATER ASSOCIATION	S05	NIT	0020	NITRATE-N	174 06133	02/24/2016	EQ	12.2	mg/L	Y	1
18750 Q	DELTA WATER ASSOCIATION	S05	NIT	0020	NITRATE-N	174 06134	02/24/2016	EQ	11.4	mg/L	Y	1
18750 Q	DELTA WATER ASSOCIATION	S05	NIT	0020	NITRATE-N	174 13108	04/20/2016	EQ	12.7	mg/L	Y	1
18750 Q	DELTA WATER ASSOCIATION	S05	NIT	0020	NITRATE-N	174 13109	04/20/2016	EQ	14.9	mg/L	Y	1
58951	EHLERS LABOR CAMP	Distr	COLI_AP	0001	TOTAL COLIFORM	174 21100	06/14/2016	EQ			Y	
58951	EHLERS LABOR CAMP	Distr	COLI_AP	0001	TOTAL COLIFORM	174 21579	06/17/2016	EQ			Y	
24151 8	EVERGREEN MOBILE PARK & SALES	S03	NIT	0020	NITRATE-N	174 14729	05/02/2016	EQ	6.98	mg/L	Y	
25610 D	FLEMINGS PLATT WATER ASSOCIATION	Distr	COLI_AP	0001	TOTAL COLIFORM	164 00216	01/05/2016	EQ			Y	+
27755 9	GLACIER SPRINGS WATER SYSTEM	Distr	COLI_AP	0001	TOTAL COLIFORM	057 62794	06/02/2016	EQ			Y	+1
27755 9	GLACIER SPRINGS WATER SYSTEM	Distr	COLI_AP	0001	TOTAL COLIFORM	057 63598	07/05/2016	EQ			Y	+
27755 9	GLACIER SPRINGS WATER SYSTEM	Distr	COLI_AP	0001	TOTAL COLIFORM	057 63723	07/07/2016	EQ			Y	+
33364 9	HILLTOP WATER OWNERS ASSOCIATION	S03	IOC_SHORT	0004	ARSENIC	174 10933	04/01/2016	EQ	0.013	mg/L	Y	1
00329 J	HINTERLAND WATER ASSN.	Distr	COLI_AP	0001	TOTAL COLIFORM	164 40483	07/14/2016	EQ			Y	
00329 J	HINTERLAND WATER ASSN.	Distr	COLI_AP	0001	TOTAL COLIFORM	164 40706	07/15/2016	EQ			Y	
37950 0	KELLY ROAD WATER ASSOCIATION	Distr	THM	0031	TOTAL	174 18770	06/01/2016	EO	106.2	ug/L	Y	1
001191	KONTREE APARTMENTS WATER SYSTEM	Distr	HERB1	0139	DINOSEB	125 70013	02/01/2016	EO	7.39	ug/L	Y	1
001191	KONTREE APARTMENTS WATER SYSTEM	Distr	HERB1	0139	DINOSEB	125 72447	04/20/2016	EO	5.33	ug/L	Y	
00119.1	KONTREE APARTMENTS WATER SYSTEM	Distr	NIT	0020	NITRATE-N	057 59282	02/01/2016	EO	18.9	mg/L	Y	1
001191	KONTREE APARTMENTS WATER SYSTEM	S02	NIT	0020	NITRATE-N	057 59283	02/01/2016	FO	19.2	mg/L	Y	1
001191	KONTREE APARTMENTS WATER SYSTEM	S02 S02	NIT	0020	NITRATE-N	057 60924	04/04/2016	FO	5	mg/L	Y	
001191	KONTREE APARTMENTS WATER SYSTEM	Distr	NIT	0020	NITRATE-N	057 61445	04/20/2016	FO	12.7	mg/L	Y	1
44950 U	LAKE TERRILL WATER ASSOC	Distr	COLLAP	0001	TOTAL COLIFORM	057 62846	06/06/2016	FO	12.7	iiig/12	v	
48875.2	LUMMI POINT WATER ASSOCIATION	\$01	NIT	0020	NITRATE-N	174 25058	07/10/2016	FO	613	mg/I	v	+
56500.6	MOUNT BAKER WATER ASSOCIATION	Distr	COLLAP	0001	TOTAL COLIFORM	057 58771	01/07/2016	FO	0.15	IIIg/L	v	+
56500 6	MOUNT BAKER WATER ASSOCIATION	Distr	COLLAP	0001	TOTAL COLIFORM	057 58801	01/08/2016	FO			v	+
56500.6	MOUNT BAKER WATER ASSOCIATION	Distr		0001	TOTAL COLIFORM	057 59362	02/03/2016	EQ			v	
57675 P	North County Christ The King Church	Distr	COLL_AP	0001	TOTAL COLIFORM	057 59375	02/03/2016	EQ			I V	
62135 T	NORTHWOOD PARK SYSTEM	S01	NIT	0020	NITRATE N	057 60813	03/29/2016	EQ	13	maЛ	v	1
62135 T	NORTHWOOD PARK SYSTEM	\$01	NIT	0020	NITRATE N	057 63435	05/23/2016	EQ	14	mg/L mg/I	I V	1
62150 0		S01	NIT	0020	NITRATE N	174 01007	01/11/2016	EQ	14	mg/L	I V	1
62150 Q	NORTHWOOD WATER ASSOCIATION	S01	NIT	0020	NITRATE N	174 01007	02/22/2014	EQ	10.8	mg/L	I V	
20746 N	OWNERS ASSOC OF REACH CLUB CONDOS	501	NIT	0020	NITRATE N	057 60467	02/14/2014	EQ	13.0	mg/L mg/I	I V	
27140 N	DOLE BOAD WATED ASSOCIATION	505	NIT	0020	NITRATE N	057 59651	03/14/2010	EQ	10	mg/L	I V	
68250 C	FOLE ROAD WATER ASSOCIATION	500		0020	NITRATE-N	057 62161	01/05/2016	EQ	0.2	mg/L	I V	
00330 C	FOLE ROAD WATER ASSOCIATION	500	NII VOC1	0020	1.2	174 21120	06/15/2016	EQ	5.8	mg/L uoЛ	I V	<u>+</u>]
08350 C	PADER FADMELADOR CAMP	500	NUT	0000	1,2	1/4 21120	06/15/2016	EQ	0.8	ug/L	Ŷ	<u> </u>
56829 Q	RADER FARMS LABOR CAMP	501	NII	0020	NIIKAIE-N	057 58830	01/12/2016	EQ	9.4	mg/L	Y	<u> </u>
56829 Q	RADER FARMS LABOR CAMP	501	NIT	0020	NITRATE-N	057 59526	02/09/2016	EQ	8.4	mg/L	Y	<u> </u>
56829 Q	KADEK FARMS LABOR CAMP	S01	NIT	0020	NITRATE-N	057 60413	03/09/2016	EQ	8.6	mg/L	Y	<u> </u>
56829 Q	KADER FARMS LABOR CAMP	S01	NIT	0020	NITRATE-N	057 61257	04/13/2016	EQ	10.2	mg/L	Y	1
56829 Q	RADER FARMS LABOR CAMP	S01	NIT	0020	NITRATE-N	057 62147	05/11/2016	EQ	10.1	mg/L	Y	1
56829 Q	RADER FARMSLABOR CAMP Whatcom County Group A Water Syst	em TSP F	NIT Not Appendix	80020	NITRATE-N	057 62917	06/08/2016	EQ	8.6	mg/L	Y	

		Source				Lab/Sample		Result					
WS ID	WSName	Number(s)	Test Panel	Analyte #	Analyte Name	Number	Collect Date	Range	Measure	UOM	Trigger	MCL	
56829 Q	RADER FARMS LABOR CAMP	S01	NIT	0020	NITRATE-N	057 63938	07/13/2016	EQ	9.1	mg/L	Y		а
27631 K	RASPBERRY RIDGE WATER ASSOCIATION	Distr	COLI_AP	0001	TOTAL COLIFORM	057 63609	07/05/2016	EQ			Y		а
71290 V	RATHBONE PARK WATER ASSOC	S06	NIT	0020	NITRATE-N	057 59313	02/02/2016	EQ	6.3	mg/L	Y		а
71290 V	RATHBONE PARK WATER ASSOC	S06	NIT	0020	NITRATE-N	057 63575	07/01/2016	EQ	7.8	mg/L	Y		а
23011 1	SMALLWOOD SHORES WELL	Distr	COLI_AP	0001	TOTAL COLIFORM	164 37299	07/05/2016	EQ			Y		а
23011 1	SMALLWOOD SHORES WELL	Distr	COLI_AP	0001	TOTAL COLIFORM	164 38660	07/07/2016	EQ			Y		а
23011 1	SMALLWOOD SHORES WELL	Distr	COLI_AP	0001	TOTAL COLIFORM	164 39215	07/11/2016	EQ			Y		а
88050 2	THORNTON WATER ASSOCIATION	Distr	COLI_AP	0001	TOTAL COLIFORM	164 28741	06/01/2016	EQ			Y		а
91000 B	VALLEY VIEW WATER ASSOC	S04	NIT	0020	NITRATE-N	174 06541	02/26/2016	EQ	5.35	mg/L	Y		а
56831 V	VICENTE FARMS & SONS ENTERPRISE	S01	NIT	0020	NITRATE-N	057 59285	02/01/2016	EQ	9	mg/L	Y		а
56831 V	VICENTE FARMS & SONS ENTERPRISE	S01	NIT	0020	NITRATE-N	057 62713	05/31/2016	EQ	8.4	mg/L	Y		а
971104	WILLEYS LAKE TERRACE WATER ASSN	Distr	COLI_AP	0001	TOTAL COLIFORM	164 29342	06/03/2016	EQ			Y		а
99550 T	Y-SQUALICUM WATER ASSN	Distr	COLI_AP	0001	TOTAL COLIFORM	057 62285	05/13/2016	EQ			Y		а

Survey of Small Whatcom County Systems (Sample)

WHATCOM COUNTY WATER SYSTEM SURVEY

(Please Circle, Under	line, Checkmark, or fill in the blanks as appropriate	. Please check a	all that apply.)
Water system form:	Water Association (governed by elected board from Investor-Owned (example: Trailer Park – Business Home Owners Association (multi purpose includin Other	n shareholders) 3 Park) 1g water)	
Water source:	Wells Spring Surfa	ace Water	Don't know
System age:	years old		Don't Know
System type:	Group A (15 or more connections) Group B (less	than 15)	Don't Know
System size:	Number of Active Connections:		
	Number of Approved Connections:		Don't know
Do you need more co	onnections? Ves	Yes No	Don't Know
Is your system expan	/ nding (Group A only)?	Yes No	Don't Know
Do you have adequa Select Your W - No p	te water rights for your needs? Vater Rights Status: ermit on file - Permit applied for, not yet	Yes No	Don't Know
- Perm - Clair	n - Exempt Well		Don't Know
DOH Operating Per	mit Status (Group A only): Green Yellow Ro	ed Blue	Don't Know
Do you have the DO	H required certified operator (Group A Only)?	Yes No	Don't Know
If yes: Is your Certi	fied Operator a: Volunteer Board Member/S Paid Board Member/Shareh	Shareholder 10lder	
Will you need a prin	Other:	- Var (Na)	Don't Know
Will you need a back	tun cortified operator in the future?	Vos No	Don't Vrow
will you need a daci	sup certified operator in the future?	Ver Ne	Don't Vrocer
will you need a cros	s connection control specialist?	Y ES INO	Don't Know
Is your Service Area Whatcom County C	defineated on the oordinated Water System Plan?	Yes No	Don't Know
Is your system a me	mber of Whatcom Water System Caucus?	Yes No	Don't Know

WHATCOM COUNTY WATER SYSTEM SURVEY

Ce Cro Cro We	rtified Water Operator (required by DOH) oss Connection Specialist (required by DOH)
Cro Cro We	oss Connection Specialist (required by DOH)
Cro We	ass Connection Plan help
We	
	ell Head Protection Plan help
Inf	formation resource for all aspects of operating an association
Sy	stem Management Plan general help (Small Water System Management Program)
Wa	ater System planning and design for more shares or expansion
M	eter reading & Billing
Bo	okkeeping, Budgeting and financial statements
<u></u> <u></u> <u></u>	oup insurance pricing
Ro	outine Testing & group discounts from labs
Òr	agoing and emergency repairs & maintenance
X Su	pport with DOE compliance: water rights applications, changes and transfers:
Re	presentation with local, state, and federal government
By	laws, Water User Agreements, Share Certificates assistance
Śu	pport with DOH compliance: water quality, quantity, system design:
W	ater Treatment planning and help
W	ater main and water treatment facility construction management
A	Central Location for accessibility and record keeping
<u> </u>	oup buying power for parts and materials
Ot	her
Comment	ts:
-	
f vou wo	uld like to be kent informed about future developments and services for Water Systems
Whataam	County please provide your contact information

Name:	D'11	WAGTER	Phone	354-2486
Address: _	8747 N	10 Thursde Rd	- hynden Email	

Page 2 of 2

Water Rights: Understanding and Management (PPT)

UNDERSTANDING YOUR WATER RIGHTS



Drinking Water System Workshop Series in Whatcom County February 18, 2017

Jim Bucknell and Andy Dunn RH2 Engineering, Inc.

WHO ARE WE?



Jim Bucknell, Project Manager, RH2

- 13 years with RH2
- 27 years with Ecology
- NWRO Water Resources Section
- Manager
- Water Resources Lead in Bellingham for WRIA 1 – Nooksack Watershed

RH2



- Andy Dunn, Hydrogeologist, RH2
- 7 years with RH2
- More than 8 years with Ecology
- Hydrogeologist and Permit Writer
- NWRO Water Resources Section

I | BOTHELL | EAST WENATCHEE | ISSAQUAH | MEDFORD | PORTLAND | RI

- Manager

 Licensed Hydrogeologist
- Certified Water Right Examiner

OUTLINE

- History of Water Law in Washington
- Water Right Attributes
- How Washington Water Law is Designed to Work
- Changing Existing Water Rights
- Getting Applications Processed
- Municipal Water Law
- "Hot/New" Topics
 - Certified Water Right Examiners
 - System Source Integration
 - Case Law Updates

RH2

THE OLD WAY (PRE-1917)

- Appropriative Water Right
 - Post Notice
 - Build diversion
 - Beneficial Use
 Water Right
- Riparian Water Right
 - Right tied to land ownership along water body
 - Multiple owners share water
 - Non-riparian owners have no rights to water

RH2

RH2

SURFACE WATER CODE - 1917 CHAPTER 90.03 RCW

Principles of western water law adopted for Washington:

- State Constitution: Waters of the state are a public resource
- The Prior Appropriation Doctrine
- ALL beneficial uses of surface water need a water right
- Perpetuity

PORTLAND I RICHLAND

SURFACE WATER CODE - 1917 CHAPTER 90.03 RCW

- First in time is first in right
- Existing water rights must be protected



RH2

RH2

RH2

GROUND WATER CODE - 1945 CHAPTER 90.44 RCW

- Supplemental to 1917 Surface Water Code
- New uses of ground water need a permit
- Existing users (in 1945) could make declarations and receive certificates
- Small water uses exempted from permitting process (permit-exempt wells)



RH2

GROUND WATER CODE - 1945 CHAPTER 90.44 RCW

- Permit-exempt wells
 - Unlimited stockwatering
 - 5,000 gpd for domestic use
 - 5,000 gpd for industrial use
 - 1/2 acre of lawn or non-commercial garden irrigation
- Did not need to go through the permitting process, but still a water right.

WATER RIGHT P'S AND Q'S COMPONENTS OF A WATER RIGHT (LIMITING FACTORS)

Q's

• Qi – Instantaneous rate

Cubic feet per second

Gallons per minute

• Qa – Annual volume

Acre-feet per year

P's

- Priority Date
- Point of
- Diversion/Withdrawal
- Place of Use
- Purpose of Use
- Provisions

RH2

| BOTHELL | EAST WENATCHEE | ISSAQUAH | MEDFORD | PORTLAND | RICHLAND | TAC

WATER RIGHT PROCESS AND DOCUMENTS Application Public Notice (aka Legal Notice) Report of Examination (aka ROE) Permit Proof of Appropriation (aka PA Form) (Proof Exam) Certificate Declaration Claim Adjudicated Certificate

BELLINGHAM | BOTHELL | EAST WENATCHEE | ISSAQUAH | MEDFORD | PORTLAND | RI

APPLICATION

- Applicant documenting intent to obtain a water right and associated details.
- Date received by Ecology determines the priority date.



PUBLIC NOTICE

- Informs the public about the intent of the applicant to obtain a water right.
- Published once a week for 2 weeks.
- 30-day protest period follows end of publication.
 - Ecology must address protests in their investigation and the protestor gets a copy of the final decision.

LINGHAM | BOTHELL | EAST WENATCHEE | IS:

NOTICE OF GROUND WATER RIGHT APPLICATION NO. 3843 TAXE NOTICE That King County Water Distices on Jacobie County Water Distices on Jacobie County Water Distices on Jacobie County Water Distront of the County Water Dispublic ground waters through a well situated within the NEW So N. Made at East W. In Rice County, in the amount of 150 galloss per minute, subject to satufor the purpose of domestic warby the community. Water and the solution of the State Supervisor of Water Resources within thirty (30) days Witness wy hand and Sofficial satu Supervisor of Water Resources within thirty (30) days Witness wy hand and Sofficial satu Supervisor of Water Re-Subsciences of Protesty. Sate Supervisor of Water Mater Supervisor of Water Sate Supervisor of Water Net Supervisor of Water Resources of Water Resources of Water Resources of Supervisor of Water Net Supervisor of Water Resources of Supervisor of Water Resources of Water Resources of Supervisor of Supervis

Legal Notice

of Supervisor of Water Resources, Olympia

RH2

REPORT OF EXAMINATION (ROE) • This document contains the rationale behind the original decision on the water right application 1 STATE OF WASHINGTON DEPARTMENT OF ECOLOGY REPORT OF EXAMINATION Sate Public Waters of the State of Washington To Assess uly 21, 1991 loe Bob Esstward, WA PUBLIC WATERS TO BE APPROPRIAT Three Pouls Insection of or source water AND CONCRETENES FOR SHE IN HE WACH FEET FOR TRANSPORT Add I RH2 ILAND | RICHLAN

FOUR TESTS

- Beneficial Use (waste not allowed)
- Water Available (physical and legal)
- No Impairment
- Not contrary to the public welfare

RH2

REPORT OF EXAMINATION (CONT.)

Ecology may:

- Approve
- Deny
- Approve with conditions
- 30-day appeal period upon issuance

RH2

PERMIT

- A right to build system and use water
- Development schedule

BRORS PROPERTY THIS DATE COMPLET RESOLUTION OF THE DATE WATER PUT TO FULL USE BY THIS DATE ALTERNATION OF THE DATE ALTERNATION

I BOTHELL I EAST WENATCHEE I ISSA

Personal property

RH2

PROOF OF APPROPRIATION

- Notarized document on which the water right permit holder identifies how much water they are using
- The certificate is issued for the quantities put to beneficial use and may be less than those on the permit
- Use must comply with the Ps and Qs discussed above
- Ecology used to do the proof exam, but now applicant must hire a certified water right examiner to do the work.

RH2

CERTIFICATE

- Granted to memorialize actual beneficial use on that property under a permit
- All supporting documentation (application, report of examination, permit) describes nature of water right, NOT just certificate
- Appurtenant (connected) to the land

RH2

WATER RIGHT CLAIM

- Intent was to document water rights that existed before either the Surface Water or Ground Water codes
- Multiple water right claim registration open periods (1969 was first opening, 1998 was the last opening)
- Long form (detailed info) and short form (minimal info)
- No official review by State or courts for validity or accuracy except via a General Adjudication

RH2

WATER RIGHTS THROUGH TIME

191	7 19	945	Now
Surface water uses subject to water right claims	Surface water u certificates	ises needing water right p	ermits or
Ground water vater right el	uses subject to aims	Ground water uses not water right permits of certificates	ding

RELINQUISHMENT

- Relinquishment is a statutory forfeiture of a water right through nonuse.
- "Use it or lose it"
- Occurs after a period of 5 consecutive years of non-use after July 1, 1967, without sufficient cause.
- Sufficient causes for non-use identified in RCW 90.14.140, and include municipal use rights.

RH2



WATER RIGHTS NUTS AND BOLTS

- Water Rights Nuts and Bolts
 - Tracking Number
 - G1-12345P or S4-56789C
 - G=Ground
 - S=Surface

RH2

WATER RIGHTS NUTS AND BOLTS

G1-56789P

- 1, 2, 3, 4 = Region
 - 1=NWRO
 - 2=SWR0
 - 3=ERO
 - 4=CRO
- 5-digit unique number
- Letter at end denotes status $\underline{P}\text{ermit}, \, \underline{C}\text{ertificate}, \, \underline{C}\text{laim}, \, \text{etc.}$

RH2

WATER RIGHTS NUTS AND BOLTS

- Primary vs. Supplemental Rights
 - Supplemental = check book sub-account
- Instream flows adopted by rule are water rights with priority dates of the date the rule took effect. Junior rights are subject to instream flows and may be interruptible.

RH2

RH2



OBTAINING WATER RIGHT INFORMATION

- Do it yourself (only partial record)
 - Spatial Water Resources Explorer
 - https://fortress.wa.gov/ecy/waterresources/map/Water ResourcesExplorer.aspx
- Public Document Request
- Request them from your Ecology field or regional office



BOTH WATER RIGHT HOLDERS ABLE TO DIVERT FULL RIGHTS











CHANGING THE ATTRIBUTES OF YOUR WATER RIGHT

- What you can change varies by water right type and stage
- What is involved
- How to get it done
- Ways to avoid having to go through the change application process
 - Adding a new or additional well
 - Changing your place of use

RH2

WATER RIGHTS DOCUMENTED BY A CLAIM OR CERTIFICATE CAN BE CHANGED:



- Point of
 Diversion/withdrawal
- Place of use
- Purpose of use
- Add uses or add irrigated acres e.g. "spreading"
- Period of use

CHANGES TO PERMITS:

Groundwater:

· Place of use

RH2

Point of withdrawal

Surface Water:

 Point of diversion under very specific and limited circumstances



WHAT'S INVOLVED IN THE CHANGE APPLICATION PROCESS?

- Public notice (2 weeks plus 30 day protest period)
- Process application and determine if the change is allowed and it meets tests
- Post draft Report of Examination on Web (30 days)
- Final Report of Examination issued followed by a 30 day appeal period

RH2

WHAT TESTS ARE INVOLVED IN THE CHANGE APPLICATION PROCESS?

Surface Water

• Impairment Test Only

Groundwater

- Impairment Test
- Same Body of Public
 Groundwater
- Public Interest

RH2



| BOTHELL | EAST WENATCHEE | ISSAQUAH | MEDFORD | PORTLAND | RI

GETTING APPLICATIONS PROCESSED

- Conservancy Boards (change only)
- Cost Reimbursement (new or change)
- RCW and Hillis Rule Getting to the front of the line (new or change)
- Office of the Columbia River (new)



RH2



CLASSIC COST REIMBURSEMENT

- Ecology contracts with a consultant to process the water right application i.e. research & write the ROE
- Applicant pays Ecology for the consultant's and Ecology's time working on the application
- Might have to pay for other senior applications to be processed as well
- Applicant is paying for a decision, not necessarily
 an approval

RH2

PILOT COST REIMBURSEMENT PROCESS

- If an applicant's consultant is one of the cost reimbursement contractors and Ecology preapproves this pathway
- Applicant directly hires cost reimbursement contractor to prepare ROE
- Applicant contracts with Ecology to pay for Ecology's time reviewing the ROE
- Applicant is paying for a decision, not necessarily an approval

RH2

RCW AND HILLIS RULE

- RCW and Hillis Rule Getting to the front of the line
 - Public Health and Safety Emergency
 - Failing Source of Supply
 - Consolidation of 2 or more public water systems to meet general public needs for the regional area

RH2

AVOIDING THE CHANGE APPLICATION PROCESS

I BOTHELL I EAST WENATCHEE I ISSAOUAI

- Drilling an additional or replacement well
- Changing the place of use of a municipal water right

WHEN CAN I DRILL REPLACEMENT OR ADDITIONAL WELLS WITHOUT HAVING TO FILE A CHANGE APPLICATION?

- When the new well will be located in the same legal description as the original public notice (usually quarter-quarter section, but not always)
- Submit a Showing of Compliance with RCW 90.44.100(3) form
- Only applicable for ground water permits and certificates, not for claims.

RH2

RH2

TYPICAL DEGAL NOTICE Legal Notice State of Washington office Resources, Office State office Resources, Office State office Resources, Office State office Resources, Office State of State of State State of State State of State Sta

seal this 11th day of February 1955. (Seal) M. G. WALKER, State Supervisor of Water Resources. (Publish: March 3, 10, 1955.)



MUNICIPAL WATER LAW

• 2003

- Defined municipal purpose water rights
- Any number of connections given in the water right documentation is no longer binding
- Place of use can be changed by updating the service area in a water system plan
- Unperfected portion of a certificate can be carried through the change process if they show due diligence toward attaining full build-out
- Additional conservation requirements

RH2

MUNICIPAL WATER LAW

- Municipal Water Uses (RCW 90.03.015(4)
- Residential use for 15 or more residential service connections
- Residential use of water for a non-residential population that is, on average, at least 25 people for at least 60 days a year.
- For governmental or governmental proprietary purposes by a City, Town, PUD, County, Sewer District, or Water District.
- A water right that delivers raw water to an entity that is ultimately used for the purposes above.

RH2

MUNICIPAL WATER LAW

- Water Rights can be conformed by Ecology upon request to specifically identify municipal as the purpose of use, if the definition is met.
- Often water rights say:
 - Group domestic
 - Multiple domestic
 - · Community domestic
- · Ecology will issue a superseding certificate

RH2

KEY MESSAGES

- Look at Ecology's entire file to understand your water rights
- Stay within your water right limits ...mind your Ps and Qs
- Water use and water rights should be consistent -If not, they need to be reconciled

RH2

HOT & NEW TOPICS IN WATER RIGHTS

- Certified Water Right Examiners (CWREs)
- System Source Integration
- Case Law
 - Swinomish Tribe vs. Ecology
 - Foster vs. Yelm
 - Hirst vs. Whatcom County

RH2

CERTIFIED WATER RIGHT EXAMINERS

- When you have a water right permit, or a water right change authorization, and after submitting your PA form to Ecology
- Certified Water Right Examiners
 - Individuals certified by Ecology
 - Hired directly by water right holders
 - Perform proof examination and provide recommendations to Ecology, based on actual use, to allow for issuance of the final certificate.

RH2

SYSTEM SOURCE INTEGRATION

- Water System with multiple water rights pulling from multiple sources of supply.
- File change applications on all water rights to:
 - Include all sources as points of withdrawal/diversion.
 - Make all water rights have the same place of use.
- Provides flexibility to water system operators

SYSTEM SOURCE INTEGRATION

Before						
Water Right Number	Source	Qi (gpm)	Qa (afy)	Place of Use		
G4-21111C	Well 1	250	150	Powerhouse		
G4-22222C	Well 2	50	50	Maintenance Center		
G4-23333C	Well 3	100	50	Employee Housing		
	Total	400	250			
After						
Water Right Number	Source	Qi (gpm)	Qa (afy)			
G4-21111C, G4-22222C, G4-23333C	Well 1, 2, and 3	400	250	Powerhouse, Maintenance Center, and Employee Housing		
	Total	400	250			
RH2		BELLINGHAM	I BOTHELL EAST WEN	atchee Issaquah medford portland richland to		

RH2

CASE LAW UPDATE

• Swinomish Tribe vs. Ecology

- Invalidated the amended Skagit Rule (WAC 173-503) and the reservation of water for future uses
- Ecology could not use OCPI* to justify water use that impairs existing instream flows
- Could not use OCPI to justify allocating water for domestic use
- OCPI is a very narrow exception that requires extraordinary circumstances before a minimum flow can be impaired

HAM | BOTHELL | EAST WENATCHEE | ISSAQUAH | MEDFORD | PORTLAND | RICH

*overriding considerations of the public interest

RH2

CASE LAW UPDATE

• Foster v. Ecology (City of Yelm decision)

- Ecology cannot use OCPI to justify permanent allocations of water
- · No impairment of instream flows
- No out-of-kind, out-of-time, or out-of-place mitigation

Implications in basins with minimum instream flows and closures:

- · Harder to do surface to groundwater changes
- Change in impacts to surface water must be examined more closely

Can't do season of use changes

CASE LAW UPDATE

• Whatcom County v. Hirst, Futurewise et al

- Whatcom County failed to comply with GMA requirements to protect water resources
- County has to ensure that water is both physically and legally available for permit-exempt wells.
- Permit-exempt wells held to the same standard as a regular water right.

Implications in basins with minimum instream flows and closures:

- Reduction/elimination of permit-exempt wells for development.
- **RH2** More requests to water systems for service.

QUESTIONS?

Jim Bucknell jbucknell@rh2.com 425-951-5424

> Andy Dunn adunn@rh2.com 425-951-5448



RH2

- a. Water System Risk Management: Liability, Insurance (PPT)
- b. Water System Risk Management: Hydrants (PPT)













PROPERTY INSURANCE

- REAL PROPERTY
 - THE BUILDINGS, ITEMS OR STRUCTURES DESCRIBED IN THE DECLARATIONS THAT YOU OWN, LEASE OR RENT AND ARE RESPONSIBLE TO INSURE -
- BUSINESS PERSONAL PROPERTY
 - THE PROPERTY, MACHINERY AND EQUIPMENT YOU OWN THAT IS USED IN YOUR BUSINESS INCLUDING -
- PERILS INSURED [CAUSE OF LOSS] · "ALL RISK" OF DIRECT PHYSICAL LOSS EXCLUDING EARTHQUAKE AND LOSS
- BLANKET LIMIT APPLICABLE PER LOSS TO COVERED PROPERTY

 - WE INSURE THE <u>SUM</u> OF ALL OF THE REAL AND BUSINESS PERSONAL PROPERTY ITEMS YOU LIST BY LOCATION ON A STATEMENT OF VALUES YOU PROVIDE AS PART OF YOUR APPLICATION FOR INSURANCE BLANKET TIME ELEMENT COVERAGE INCLUDING LOSS OF INCOME AND VARIOUS EXTRA EXPENSE COV[S]
- VALUATION
- REPLACEMENT COST FOR ALL REAL AND PERSONAL PROPERTY
- MOBILE EQUIPMENT
- VALUATION IS ACTUAL CASH VALUE I.E., REPLACEMENT COST LESS DEPRECIATION

ALLIED THE





ALLIED ALLES

COMMERCIAL GENERAL LIABILITY **INSURANCE**

- · COMMERCIAL GENERAL LIABILITY [CGL] PROVIDES COVERAGE TO A BUSINESS FOR CLAIMS ALLEGING BODILY INJURY AND/OR PROPERTY DAMAGE [THIRD PARTY] CAUSED BY THE
 - BUSINESS' OPERATIONS
 - PRODUCTS
 - INJURY THAT OCCURS ON THE BUSINESS PREMISES
 - MEDICAL PAYMENTS [NO FAULT COVERAGE FOR MINOR INJURIES]

 - FIRE DAMAGE LEGAL LIABILITY [TO RENTED PREMISES YOU OCCUPY]
 - PERSONAL AND ADVERTISING [ECONOMIC] INJURY

10

ALLIED ALLES

COMMERCIAL GENERAL LIABILITY INSURANCE EXAMPLES OF THIRD PARTY INJURIES THAT CAN OCCUR CUSTOMERS TRIP AND FALL ON YOUR PREMISES [OR ON AND OFF YOUR WATER TOWER] PIPE LINE BREAKS RESULTING IN WATER DAMAGE TO A THIRD PARTY'S OR MEMBERS PROPERTY SUDDEN AND ACCIDENTAL RELEASE OF HAZARDOUS CHEMICALS USE IN THE TREATMENT OF WATER PESTICIDE/HERBICIDE OVER SPRAY DAMAGING A THIRD PARTY'S OR MEMBERS PROPERTY SEWER LINE BREAK, BACK UP OF SEWERS INTO A THIRD PARTY'S OR MEMBER'S PREMISES

- FAILURE TO SUPPLY WATER WHICH RESULTS IN DAMAGE TO ANOTHER' PROPERTY FIRE HYDRANTS ARE A GOOD EXAMPLE

11

FAILURE TO PROPERLY TREAT POTABLE WATER YOU PROVIDE RESULTING IN ILLNESS OR WORSE

INSURANCE WATER SPECIFIC SPECIALTY COVERAGES YOU MAY WISH TO HAVE WATER AND WASTEWATER TESTING ERRORS & OMISSIONS FAILURE TO SUPPLY LIABILITY @ FULL LIMITS - NO STANDARD ENDORSEMENT LIMITING COVERAGE TO SUDDEN AND ACCIDENTAL EVENTS WATERBORNE ASBESTOS

COMMERCIAL GENERAL LIABILITY

- LEAD [FLINT, MICHIGAN]
- FUNGI AND BACTERIA, ETC



ALLIED TALLES

COMMERCIAL GENERAL LIABILITY INSURANCE

WHO IS AN INSURED

- AN ORGANIZATION OTHER THAN A PARTNERSHIP, JOINT VENTURE, OR LLC, YOU ARE AN INSURED. YOUR EXECUTIVE OFFICERS AND DIRECTORS ARE INSUREDS, BUT ONLY WITH RESPECT TO THEIR DUTIES AS OFFICERS AND DIRECTORS.

13

- · VOLUNTEER WORKERS AND/OR EMPLOYEES ARE INSUREDS
- REAL ESTATE MANAGERS TEMPORARY CUSTODIANS
- LEGAL REPRESENTATIVES
- GOOD SAMARITANS
- FTC

ALLIED AND





COMMERCIAL GENERAL LIABILITY INSURANCE WATER CONTAMINATION IS IT POLILITION HOW DOES THE INSURER SEE IT? HOW WE ADDRESS THE ISSUE IN OUR POLICY FORMS – CRITICAL EXCEPTIONS [IN WRITING] – "COVERAGE IS PROVIDED FOR BODILY INJURY OR PROPERTY DAMAGE WHICH OCCURS OR TAKES PLACE AS A RESULT OF YOUR OPERATIONS AND ARISES OUT OF THE FOLLOWING "- POTABLE WATER WHICH YOUR PROVIDE TO OTHERS CHEMICALS YOU USE IN YOUR WATER /WASTEWATER TREATMENT PROCESS YOUR APPLICATION OF PESTICIDES AND HERBICIDES SMOKE DRIFT FROM CONTROLLED AND PRESCRIBED FIRES... FUELS, LUBRICANTS, OR OTHER OPERATING FLUIDS ... NEEDED FOR THE OPERATION OF MOBILE EQUIPMENT ESCAPE OR BACK UP OF SEWAGE OR WASTEWATER FROM ANY SEWAGE TREATMENT PLANT OR FIXED CONDUIT OR PIPING....YOU CONTROL SUDDEN AND ACCIDENTAL EVENTS RESULTING A POLLUTION LOSS – EXCEPTIONS – LONG TERM SEEPAGE AND UNDERGROUND PETROLEUM STORAGE TANKS

16

ALLIED MALLES





NON-OWNED AND HIRED AUTOMOBILE LIABILITY COVERAGE

- NON-OWNED AND HIRED AUTOMOBILE LIABILITY INSURANCE COVERS BODILY INJURY AND PROPERTY DAMAGE (THIRD PARTY) CAUSED BY A VEHICLE THE "ASSOCIATION" HIRES [INCLUDING RENTED OR ROROWED) OF CAUSED BY NON-VOWED VEHICLES. VEHICLES OWNED BY OTHERS, INCLUDING OWNED BY EMPLOYEES [IF ANY] <u>AND ASSOCIATION MEMBERS.</u> •
- · COVERAGE WILL PAY ON BEHALF OF THE NAMED INSURED "ASSOCIATION" THEREFORE IT IS THE ASSOCIATION WHO IS PROVIDED COVERAGE
- THE INDIVIDUAL ASSOCIATION MEMBER WHO DROVE THE HIRED OR THEIR OWN VEHICLE ON BEHALF OF THE ASSOCIATION IS NOT COVERED IT IS IMPERATIVE THAT ANYONE WHO DRIVES FOR THE ASSOCIATION HAVE THEIR OWN COVERAGE PREFERABLY INCLUDING BOTH LIABILITY AND AUTO PHYSICAL DAMAGE
- · LIMIT OF LIABILITY \$1,000,000 PER ACCIDENT
- IN THE ABSENCE OF AN OWNED AUTO POLICY COVERAGE IS ADDED TO THE GENERAL LIABILITY SECTION BY ENDORSEMENT

19

21

23

ALLIED MALLES



MANAGEMENT LIABILITY AKA **DIRECTORS & OFFICERS LIABILITY COVERAGE**

WRONGFUL ACTS (D&O)

 COVERAGE APPLIES TO ANY ACTUAL OR ALLEGED ERROR, ACT, OMISSION, NEGLECT, OR BREACH OF DUTY, INCLUDING VIOLATION OF ANY CIVIL RIGH

EMPLOYMENT PRACTICES LIABILITY

 COVERAGE APPLIES TO ACTUAL OR ALLEGED IMPROPER EMPLOYMENT RELATED PRACTICES. INCLUDES VIOLATIONS OF CIVIL RIGHTS, WRONGEUL TERMINATION (AGE/SEX), FAILURE TO HIRE UNEQUAL TREATMENT (PAY/PROMOTION), AND HARASSMENT.

EMPLOYEE BENEFITS LIABILITY

· COVERAGE APPLIES TO ACTS, ERRORS, OR OMISSIONS IN COUNSELING, INTERPRETING, HANDLING RECORDS, OR EFFECTING ENROLLMENTS IN YOUR BENEFIT PLANS.

ALLIED MALLES

MANAGEMENT LIABILITY AKA **DIRECTORS & OFFICERS LIABILITY** COVERAGE DUTY TO DEFEND FORM BROAD DEFINITION OF NAMED INSURED INCLUDING PAST, PRESENT AND FUTURE DIRECTORS

- OUTSIDE DIRECTORSHIP COVERAGE
- NO INTENTIONAL ACTS, ASSAULT & BATTERY OR BODILY INJURY EXCLUSIONS
- DEFENSE COSTS ARE OUTSIDE OF THE UMIT
- · LIMITS OF LIABILITY -
 - WRONGFUL ACTS -\$1.000.000 PER ACT
 - \$1,000,000 PER OFFENSE
 - EMPLOYMENT PRACTICES -
 - EMPLOYEE BENEFIT PLANS -
- \$1,000,000 PER ACT
 - POLICY AGGREGATE -
- \$3,000,000 AGGREGATE LIMIT

22

ALLIED MALLES

ALLIED ALLES



EXCESS LIABILITY	
EXCESS FOLLOWING FORM	
PROVIDES ADDITIONAL LIMITS ABOVE UNDERLYING LIABILITY LIMITS	
 LIMITS UP TO \$10,000,000 PER OCCURRENCE EXCESS OF THE FOLLOWING 	
PRIMARY LIMITS OF \$1,000,000 COVERAGE LIST BELOW	
FOLLOWING FORM - OVER THE FOLLOWING UNDERLYING LINES OF	
 OWNED AUTO LIABILITY [IF ANY] 	
 NON-OWNED AND HIRED AUTO LIABILITY 	
 PUBLIC OFFICIALS/MANAGEMENT LIABILITY [DIRECTORS & OFFICERS] 	
 EMPLOYMENT PRACTICES 	
O EMPLOYEE BENEFIT PLANS	
 EMPLOYERS LIABILITY. [WORKERS COMPENSATION - COV B] 	
LUPP Interferences	
LLIED THE	
COLLE CITE COLLEGE	24

ALLIED TALES

26

28

TERRORISM INSURANCE COVERAGE

- OPTIONAL COVERAGE
- UNDER THE TERRORISM RISK
 INSURANCE ACT YOU HAVE THE
 RIGHT TO PURCHASE INSURANCE
 COVERAGE FOR LOSSES RESULTING
 FROM ACTS OF TERRORISM AS
 DEFINED BY THE ACT
- WILL PAY ROUGHLY 80% OF THE DAMAGE CAUSED BY THE VIOLENT ACT AND WHICH IS DETERMINED TO BE AN ACT OF TERRORISM



CYBER LIABILITY/ ASSOCIATED COVERAGES

- PRIVACY AND NETWORK SECURITY COVERAGE
- NOTIFICATION AND CREDIT MONITORING COSTS COVERAGE
- DATA FORENSICS COVERAGE
- CRISIS MANAGEMENT COVERAGE

ALLIED Serveranting

CYBER LIABILITY/ ASSOCIATED COVERAGES

PRIVACY AND NETWORK SECURITY [CYBER LIABILITY]
 THE INSURER WILL PAY ON BEHALF OF THE NAMED INSURED FOR ANY LOSS
 ARISING FROM A CLAIM WHICH INVOLVES AN ALLEGED BREACH OF THE
 NAMED INSURED'S NETWORK SECURITY WHICH RESULTS IN IDENTITY THEFT
 OR CREDIT/DEBIT CARD THEFT

AVAILABLE LIMITS - \$100,000. \$250,000, \$500,000 OR \$1,000,000

CYBER LIABILITY/ ASSOCIATED COVERAGES

NOTIFICATION AND CREDIT MONITORING COST COVERAGE
 THE INSURER WILL REIMBURSE THE NAMED INSURED THE COST INCURRED
 FOR NOTIFICATION OF AND CREDIT MONITORING OF ANY PERSON
 INCLUDING EMPLOYEES ARISING FROM A SUSPECTED OR ACTUAL BREACH
 OF THE NAMED INSURED'S NETWORK SECURITY

LIMIT IS EQUAL TO AND SEPARATE FROM THE CYBER LIABILITY LIMIT



27





32



33





WHY INSURANCE?

COMMON THOUGHTS ABOUT INSURANCE:

CONFUSING / COMPLICATED

CHEAPER IS ALWAYS BETTER

INSURANCE IS ALL THE SAME

TIME CONSUMING

WASTE OF MONEY

.

.

•

•

ALLIED MALES

Allied Public Risk





Water System Manager

- •Responsible for day to day operation
- •No real authority

What is our responsibility and liability?

- Part of our job is to Actively Manage Risk
- What is our risk and what is the right thing to do?
 - Ethically
 - Legally



Historically

- Ownership?
- Utility
 Private
 Who Knows?
- Legal Ambiguity?
- What Happened?
 - Lawsuits

 - Arguments
 Purveyor refusal to install hydrants
 Purveyor/Customer refusal to maintain hydrants
 - Purveyor decision to remove hydrants

Follow the \$\$\$

- Fire protection is a vital public service
- Current regulations require water systems to install on new mains
- Purveyors may recover costs for fire suppression facilities from
 - All customers as a cost of complying with state laws
 - A single customer based on use · Both of the above









Tools for Identifying & Managing Risk

- Use Your Gut Feeling (example excerpt)

"The home where my Grandmother lives burned to the ground last night. The fire started in the garage which is not connected to the house. When the fire department attempted to hose down the house so the fire would not spread, BOTH hydrants they tried did not produce water. While looking for another source of water the home caught fire and was a complete loss and they did not have home owners insurance. (ugh!)

Who is liable for the non/mal -functioning hydrants?







Chapter 70.315 RCW

WATER PURVEYORS FIRE SUPPRESSION WATER FACILITIES

Liability Protection

- for purveyors from damages that arise out of a fire event (Municipal Corporation)
- for purveyors from damages that arise out of a fire event \underline{if} maintenance measures are described (Non-Municipal Corporation)
RCW 70.315.060 (2)

Liability protection for fire suppression water facilities and services.

• A purveyor that is not a municipal corporation is not liable for any damages that arise out of a fire event and relate to the operation, maintenance, and provision of fire suppression water facilities and services if the purveyor has a description of fire hydrant maintenance measures. The description of fire hydrant maintenance measures must be kept on file by the water purveyor and be available to the public, and may be included within the purveyor's most recently approved water system plan or small water system management program.

What is Our Responsibility?

- Install Fire Hydrants When Required
- Maintain Fire Hydrants Once Installed
- Document Maintenance Measures



Tools for Creating a Maintenance Program

Law

- AWWA standards
- Manufacturer standards
- Industry standards
- What are other utilities doing?
- Local Fire Authority Having Jurisdiction
- Keep It Simple 😳

How Do I Implement This Economically?

Physical Maintenance Exercising Maintenance

Flow Testing

De-vegetation

Repairs

 Record Keeping Program Description
Inventory/Map Hydrants

- Point to Reference Materials
- Record Maintenance Activities
- Include Agreements Copies of Flow Tests
- Local Fire Authority Having Jurisdiction

6.0	A -
	To.
State of the	A STATE OF A

Paint (Colors Have Meaning Red = <500 gpm or unknown flow in Whatcom County and per NFPA)

		. *
	THE PLAT P	IB P
attant attait min man in which i		

- a. Mapping: Enterprise Terrace System Mapb. Mapping: Regional Overview Map



Google Earth

Image © 2018 DigitalGlobe Data NOAA Data SIO, NOAA, U.S. Navy, NGA, GEBCO



0.01 i to x

0.0

Pilot Program Introduction Presentation (PPT)

September 27, 2016



GROUP A WATER SYSTEM CAPACITY DEVELOPMENT TECHNICAL SUPPORT PROGRAM PILOT

Presented by: Dave Olson, Cornerstone Management, Inc.



WORKING TOGETHER TO MAKE THINGS BETTER

The Washington State Department of Health, Office of Drinking Water has partnered with PUD No. 1 of Whatcom County to develop a local outreach and technical assistance program to improve the technical, managerial, and financial (TMF) capacity of drinking water utilities in Whatcom County.

DEFINITION OF WATER SYSTEM CAPACITY

A water systems capacity is the system's technical, managerial, and financial capability to achieve and maintain compliance with all relevant local, state, and federal plans and regulations.

In other words, the system has the knowledge, tools, and resources to ensure it can provide safe and reliable drinking water now and into the future.

WORKING TOGETHER TO MAKE THINGS BETTER

"The public is best protected when water utilities have informed / engaged governing bodies who, with qualified certified operators, conduct on-going assessment of utility operations / maintenance and take active steps to finance and plan for appropriate infrastructure in a timely manner."

Derek Pell, Assistant Regional Manager Washington State Drinking Water Operations

OFFICE OF DRINKING WATER MISSION

Protect the health of the people of Washington by ensuring safe and reliable drinking water:

- Emergency response to actual or potential public health emergencies.
- Prevention as first line of defense, with a goal of avoiding potentially health-threatening and costly problems.
- · Keeping customers informed.

PREVENTION IS FIRST LINE OF DEFENSE

The Technical Support Program directly supports the core strategies of the ODW Mission through:

- <u>Water System Inspections</u> (Sanitary Surveys); Water System Operator <u>Training</u> and Continuing <u>Education</u>
- <u>Technical Assistance Programs;</u> Funding programs; Construction Plan Reviews; Source and Distribution Monitoring; Source Water Protection.
- Planning Programs to Help Water Systems Evaluate Overall Technical, Financial, and Managerial Capacity; Identify Current and Future Challenges with Strategies to Address Them

PUD NO. 1 STRATEGIC PLANNING

- The Technical Support Program Pilot provides the PUD an opportunity to:
 - Better understand the needs of the local drinking water community
 - Evaluate PUD's role in support of the Vision and Mission
 - Clarify and refine the PUD's related strategic planning
 - Identify challenges and facilitate solutions

PILOT PROGRAM SCOPE OF WORK

FOUR TASKS

Task 1: Assess water system capacity need and develop technical assistance strategy.

Task 2: Offer Capacity Technical Assistance. Conduct workshops and/or attempt to meet with all Group A water systems (<1,000 connections).

Task 3: Submit a report on the pilot Water System Capacity Development Technical Assistance Program: Methodology, Data, Conclusion, and Recommendations (2018).

Task 4: Present Pilot Results and Experiences along with DOH to Washington PUD Association and Whatcom County Executive (2018).

TASK 1: ASSESS WATER SYSTEM CAPACITY NEED AND DEVELOP TECHNICAL ASSISTANCE STRATEGY.

Task 1.1 Compiled existing data to review indicators of TMF capacity.

Task 1.2 Conduct outreach to understand need and seek input from PWS on effective technical assistance delivery mechanisms at the local level.

Task 1.3 Develop technical assistance training outline to meet specific goals.

Task 1.4 Develop performance measures to meet specific goals.

TASK 1.1 COMPILE EXISTING DATA TO REVIEW INDICATORS OF TMF CAPACITY.

- Developed core database for 182 Group A Systems in Whatcom County
- Identified primary study group representing 142 water systems.
- Review key system capacity indicators.
- Summarized Sanitary Survey findings.

GROUP A WATER SYSTEM SERVICE AREAS



BIG PICTURE: HOW ARE WE DOING TODAY

Operating Permits

- <u>126 Green:</u> In compliance with all DOH requirements.
- <u>3 Yellow:</u> In compliance with DOH requirements but needs to submit planning documents or is under agreement for significant non-complier violation.
- <u>O Red:</u> Non-compliance with DOH requirements. Inadequate for existing uses and no additional connections allowed. Possible denial of homes loans, building permits, food service, other permits.
- <u>53 Blue:</u> In compliance with DOH requirements but does not have an approved system design. Adequate for existing uses but not adequate for new connections.

TASK 1.1 COMPILE EXISTING DATA TO REVIEW INDICATORS OF TMF CAPACITY.

Summary of system capacity indicators.



TASK 1.1 COMPILE EXISTING DATA TO REVIEW INDICATORS OF TMF CAPACITY.



TASK 1.1 COMPILE EXISTING DATA TO REVIEW INDICATORS OF TMF CAPACITY.



TASK 1.2 CONDUCT OUTREACH TO UNDERSTAND NEED AND SEEK INPUT FROM PWS ON NEEDS

Conduct outreach to understand need and seek input from PWS on effective technical assistance delivery mechanisms at the local level.

- Develop outreach program including interviews and online survey.
- Meet individually and at outreach events with systems interested in support throughout.

TASK 1.3 DEVELOP WORKSHOPS AND TRAINING

- Develop workshops and training based on feedback and findings.
- Leverage Washington State "What Is Value of Water" campaign.

TASK 1.4 DEVELOP PERFORMANCE MEASURES TO MEET SPECIFIC GOALS.

Specific utility growth in TMF or identify barrier to growth.

- Implement a Budget
- Complete Asset Inventory and Assessment
- Develop Operation and Management Policy
- System Mapping

TASK 2: OFFER CAPACITY TECHNICAL ASSISTANCE.

Conduct workshops and/or attempt to meet with all Group A water systems (<1,000 connections).

Water System Contacts To Date:

Description	Total in Group	No. Contacted	% of Group
Community	87	56	64%
TNC	42	9	21%
NTNC	13	3	23%
TSP Group Totals	142	68	48%

TASK 2: AREAS OF TECHNICAL ASSISTANCE PROVIDED.

Water System Contacts To Date:

- Administration/Recordkeeping
- Governance/Succession Planning
- Consolidation/Intertie Opportunities
- Infrastructure Planning/Replacement
- Water Rights Deficiency Options

OUTREACH HIGHLIGHTS

Covenant Christian School: Nitrate Contamination

- Secured grant funding and facilitated consolidation
- DOH resolved significant non-compliance issue.

Smallwood Shores: Disinfection Needed

- Responded to DOH specific request for system support
- Identified a solution and outlined steps to be taken
- Provided follow-up training on installation and operation

Water Rights Deficiency

· Identified potential solutions for 2 systems by intertie

NEXT STEPS

- · Continue updating data base
- Increase PUD understanding of specific utility TMF Capacity
- Facilitate opportunities and foster networking between water utilities
- Facilitate opportunities for consolidation/restructuring
- · Focus Technical Support in Common Areas of Need
- Offer assistance with Sanitary Survey deficiencies
- Develop Training/Workshop Opportunities
- Develop survey/outreach plan to obtain input on needed technical assistance topics and effective delivery mechanisms.



TASK 1.3 DEVELOP WORKSHOPS AND TRAINING

Training and education needs identified

TASK 1.3 DEVELOP WORKSHOPS AND TRAINING

Training and education needs identified



Pilot Program Research and Database Findings Presentation (PPT)



Presented by: Dave Olson, Cornerstone Management, Inc.

TECHNICAL SUPPORT PROGRAM PILOT

VISION: THE BIG PICTURE

Safe, Reliable Supply of Quality Drinking Water that is Sustainable and Affordable in Whatcom County.



VISION WITHOUT ACTION



MISSION: ODW CALL TO ACTION

<u>Work with others</u> to protect the health of the people of Washington by ensuring safe reliable drinking water.

Core Elements:

- Emergency response to actual or potential public health emergencies.
- Prevention as first line of defense, with a goal of avoiding potentially health-threatening and costly problems.
- · Keeping customers informed.



ENGAGED & PROACTIVE

"The public is best protected when water utilities have informed / engaged governing bodies who, with qualified certified operators, conduct on-going assessment of utility operations / maintenance and take active steps to finance and plan for appropriate infrastructure in a timely manner."

> Derek Pell, Assistant Regional Manager Washington State Drinking Water Operations

WORKING WITH OTHERS

The Washington State Department of Health, Office of Drinking Water has partnered with PUD No. 1 of Whatcom County to develop a local outreach and technical assistance program to improve the technical, managerial, and financial (TMF) Capacity of drinking water systems in Whatcom County.

STRATEGY: ACTION PLAN

The Technical Support Program (TSP) directly supports the strategies of the ODW Mission:

ODW Strategies:

- Water System Inspections (Sanitary Surveys);
- System Operator Training and Continuing Education
- <u>Technical Assistance</u> Programs
- Planning Programs to Help Water Systems Evaluate Overall Technical, <u>Financial, and Managerial</u> "Capacity"
- Identify Current and Future Challenges with Strategies to Address Them

TSP SCOPE OF WORK

The Technical Support Program (TSP) directly supports the strategies of the ODW Mission:

Four Tasks:

- Task 1: Assess water system <u>capacity</u> need and develop technical assistance strategy (2016-2017).
- Task 2: Offer <u>Capacity</u> Technical Assistance through workshops and one-on-one meetings (2016-2018).
- Task 3: Submit a report on the pilot Water System Capacity Development Technical Assistance Program Pilot (2018).
- Task 4: Present Pilot Results and Experiences along with DOH to Washington PUD Association and Whatcom County Executive (2018).

OBJECTIVE: CAPACITY DEVELOPMENT

Definition of Capacity:

A water systems capacity is the system's technical, managerial, and financial capability to achieve and maintain compliance with all relevant local, state, and federal plans and regulations.

In other words, the system has the knowledge, tools, and resources to ensure it can provide safe and reliable drinking water now and into the future.

OVERVIEW: METHODOLOGY

Walk through a visual thinking process we used to help us understand local system Capacity issues and develop a framework for the remaining project.

Five Key Areas:

- Current Reality
- Desired Reality
- Obstacles to Overcome
- Resources Available and Needed
- Strategies to Bridge the Gap





Category	# In Group	Description
Community	87	Serves the same people year-round.
Transient Non- Community (TNC)	42	Serves the same people more than six months per year, but not year-round. (Schools, Institutional, Commercial/Business, Schools, Day Care, Industrial)
Non-Transient Non- community (NTNC)	13	Serves the public but not the same individuals for more than six months. For example: (Rest Area, Campground, RV Sites, Hotel/Motel/Overnight Units)
Totals	142	
	• 14	42 Group A Systems Ranging in Size from 15-1,000 Connections, each
Current Reality	re • 8	presented by a different governing body or individual. Ownership Types: City, County, District, Association, Private, Investor.
Current Reality	re • 8 • 11 Se Fi	presented by a different governing body or individual. Ownership Types: City, County, District, Association, Private, Investor. 2 Customer Characteristics: Residential, Commercial, Industrial, Food ervice, Hospital/Clinic, Lodging, Recreational/RV Parks, Schools, Church, re Station, Temporary Farm Worker Housing, etc.

BACKGROUND AND CULTURE

- Rural water systems built in 1960's & 1970's based on minimal rules and regulations using old technology and standards. Many are still operating under the original culture and original infrastructure.
- Short Term Mindset/Denial: It shouldn't be that way, not my fault, kick the can down the road approach.
- Aging Infrastructure with no capital replacement plan or savings.
- New Regulations (RTC) and Compliance Emphasis (e.g. Cross Connection Control).
- Increasing Risk and Liability for Governing Body, Volunteers, and Operators
- Attrition of Operators/Volunteers/Board Members Due to Time Commitment and Risk
- Increasing Administrative Responsibilities and Complexity

Current Reality



BOTTOM LINE: MOST SMALL WATER SYSTEMS ARE BEHIND THE CAPACITY CURVE



Source Water Adequacy	The source is adequate to meet current and future demands. The source meets all applicable water quality standards and is appropriately sampled and protected. The system is operating within water right limitations.	
System Operations	The system has a certified operator who: - Understands the benefits of public health protection. - Knows the applicable drinking water standards. - Understands the system's technical and operation characteristics. - Implements the system's operation and maintenance plan successfully.	
Infrastructure Adequacy	The system can reliably produce and deliver an adequate supply of water that meets all drinking water standards because its infrastructure, from source to distribution, is in good condition and has not exceeded its useful life.	
Financial Capa	nity	
Revenue Sufficiency	Rates and other system charges cover the full cost of providing service. System personnel know and can measure all costs and revenues. Reserve accounts or savings are available for unexpected expenses.	Desired Reality
Fiscal Management	System personnel keep adequate books and records, use appropriate budgeting, accounting, and financial planning methods, and manage revenues effectively.	
Credit Worthiness	 The system has an established credit rating to allow personnel to access funds for an emergency or to implement the capital improvement plan. System personnel can access capital for the system through public or private 	





- Big Responsibility and Difficult Job: Risk-Resource-Decisions-Consequence
- Members Only Mindset, No Obligation to Plan for Infill or Expansion of for New Demand
- Attrition of Certified Operators, Governing Body, and Volunteers: Poor Pay/Part-Time
- Infrastructure Out of Sight Out of Mind Literally Until it Fails with no Capital Replacement Plan
- Poor Documentation of Governance, Mapping, and O&M for Infrastructure
- Inadequate Rates, Marginal Operating Capital, and Little if Any Emergency or Capital Reservence
- Funding Can Be Complexed, Costly on the Front End, Limited and Very Competitive.
- Impact of New/Changing Rules: Hirst Ruling/RTCR-Assessments/Connection Control Program
- Cross Connection Control Complexity, Liability and Administration (1,000 to 100 connections by 2018)

Obstacles

- Rural Density Does Not Foster Capital Planning/Investment for Future Demand/Infill
- Limited Supplies of Water Available to Meet Future Demand: Wet Water/Water Rights.
- Inconsequential Service Area Adjustments are Overly Complicated.
- Governing Bodies Afraid to Consolidate for Fear of Losing Control and Higher Rates
- Limited Local Technical Assistance (Resources)



 Vision
 Mission

 Safe, Reliable Supply of Quality Driking Water
 Facilitate & Assix twith Developing & Maintaining Capacity with Indegendence

 *
 Implementing New/Complex Rules
 Facilitate & Assix twith Developing & Maintaining Capacity with Indegendence

 *
 Small Systems are Strugging
 •
 Implementing New/Complex Rules

 *
 Increasing Complext Nulture from 6970%
 •
 •

 •
 Poor Governance/ORM Documentation
 •
 •

 •
 Poor Governance/ORM Documentation
 •
 •

 •
 Faces of Agency Intervention High Rates
 •
 •

 •
 Increasing (for Small Systems
 •
 •

 •
 Faces of Agency Intervention High Rates
 •
 •

 •
 Interesting (for Small Systems
 •
 •

 •
 Intervention High Rates
 •
 •

 •
 Intervention (for Small Systems)
 •
 •

 •
 East of Agency Intervention High Rates
 •
 •

 •
 Intervention High Rates
 •
 •

 •
 Intervention (for Small Systems)









LOOKING FORWARD:

WHATS NEXT?

- Continue to update and maintain our assessment data base
- Implement Outreach Plan/Survey to obtain input on needed technical assistance topics and
 effective delivery mechanisms.
- Focus Technical Support in Common Areas of Need
- Offer Assistance to Address Sanitary Survey Issues Identified Seek Out Opportunities for Consolidation/Restructuring
- · Foster Network Opportunities Among Water Utilities and Operators Promote Drinking Water Training/Workshops/Symposium
- Increase PUD understanding of TMF Capacity need

PUD NO. 1 STRATEGIC PLANNING

The Technical Support Program Pilot provides the PUD an opportunity to:

- · Better understand the needs of the local drinking water community
- Evaluate PUD's role in support of the Vision and Mission
- · Clarify and refine the PUD's related strategic planning
- · Identify challenges and facilitate solutions



QUESTIONS? Why did we stop

TASK 1: PROGRESS REPORT

Task 1: Assess water system capacity need and develop technical assistance strategy.

- Task 1.1 Compiled existing data to review indicators of TMF capacity. Task 1.2 Conducting outreach to understand need and seek input from Water Systems on effective technical assistance needs and delivery mechanisms at the local level through interviews and survey's.
- Task 1.3 Developing technical assistance training outline to meet
- specific goals such as: Workshops in areas of key interest: Water Rights, Leak Detection, Risk Management.
- Education in areas of deficiencies identified during the data assess
- Task 1.4 Develop performance measures goals such as number of systems that:
 - Review/update their Governance/Policy documents
 - Document and/or Implement O&M Procedures
 - · Prepare a Budget, Rate Analysis, Asset Analysis, or Develop a Capital Plan

TASK 2: PROGRESS REPORT/HIGHLIGHTS

Task 2: Offer Capacity Technical Assistance. Conduct workshops and/or attempt to meet with all Group A water systems (<1,000 connections).

- Working with 2 of 3 systems with Yellow Operating Permits (i.e. significant non-complier)
- Applied for two new consolidation feasibility grants: Nitrate/Resiliency
- · Facilitating a significant water right transfer to Lynden
- Of 6 systems listed in CWSP that were exceeding their water rights, we helped resolved one and began discussion with two others this week
- As part of the Drought Planning effort we will further explore potential interties and alternate supply options
- Workshops in key areas of interest: Water Rights, Leak Detection, Risk Management/Hydrant Liability, Cross Connection Control, Rate Setting

Pilot Program Project Conclusion Presentation (PPT)

November 13, 2018 - PROJECT CONCLUSION



GROUP A WATER SYSTEM CAPACITY DEVELOPMENT TECHNICAL SUPPORT PROGRAM PILOT Presented by: Dave Olson, Cornerstone Management, Inc.

OUR VISION:

Safe, Reliable Supply of Quality Drinking Water that is Sustainable and Affordable in Whatcom County.

MISSION: STATE OFFICE OF DRINKING WATER:

<u>Working with others to protect the health of the people of Washington</u> by ensuring safe reliable drinking water.

Office of Drinking Water Core Elements:

- Emergency response to actual or potential public health emergencies.
- <u>Prevention as first line of defense</u>, with a goal of avoiding potentially healththreatening and costly problems.
- Keeping customers informed.

KEY STRATEGY: STATE OFFICE OF DRINKING WATER

Prevention is the first line of defense through:

- Sanitary Surveys (inspections), Operator Training, Continuing Education
 Technical Assistance Programs; Funding programs; Construction Plan
- Reviews; Source and Distribution Monitoring; Source Water Protection
- Planning Programs to <u>Help Water Systems Evaluate Overall Technical</u>, <u>Financial</u>, and <u>Managerial Capacity</u> Identify Current and Future Challenges with Strategies to Address Them

OBJECTIVE: LOCAL CAPACITY DEVELOPMENT

Definition of Capacity:

A water systems capacity is the system's technical, managerial, and financial capability to achieve and maintain compliance with all relevant local, state, and federal plans and regulations.

In other words, the system has the knowledge, tools, and resources to ensure it can provide safe and reliable drinking water now and into the future.



ANOTHER WAY OF LOOKING AT IT!



LOCAL CAPACITY SUPPORT PROGRAM

The strategy is to support local water systems by building on local relationships and utilizing local expertise to assist small systems with the knowledge, tools, and resources needed to build and maintain Capacity.

The Technical Support Program Provided An Opportunity To: • Better understand local capacity needs

- Explore local capacity development strategies
- Build relationships in the community to support capacity development.

PILOT PROGRAM SCOPE OF WORK

FOUR TASKS

Task 1:	Assess water system capacity need and develop technical assistance strategy (2017).
Task 2:	Assist water systems with Capacity Technical Assistance through workshops and one-on-one support (2017-2018).
Task 3:	Report on Capacity Technical Assistance Program pilot Methodology, Data, Conclusion, Next Steps (2018).
Task 4:	Present pilot findings and experiences with DOH to Washington PUD Association and County Executive (2019)

TASK 1: ASSESS NEED AND DEVELOP ASSIST STRATEGY

FOUR SUBTASKS

Task 1.1:	<u>Compiled</u> database of Technical, Managerial, and Financial Capacity indicators.
Task 1.2:	<u>Conducted</u> outreach through surveys and interaction with systems to gain better understanding local needs.
Task 1.3:	Developed technical assistance strategy including training workshops targeting areas of local interest and need, and individual system one-on-one technical support.
Task 1.4	Explored ways to measure goals and progress.

Number and Type of Public Water Systems	Number of Systems	Estimated Connections	Estimated Population	Percent of Total
Group A				
Community Water Systems	102	64,794	168,283	98.6669
Non-Transient Non-Community Water Systems (NTNC) *school, church, business, fire hall, etc.	15	123	5	0.003%
Transient Non-Community Water System (TNC) **corner store, gas station, restaurant, etc.	64	3,673	137	0.080%
Group B (<15 residential connections and < 25 people/day)	234	1,016	2,134	1.251%
Total	415	69,606	170,559	100%



FOUND: 79 GROUP A NON-COMMUNITY SYSTEM:	FOUND:	79 GROUP A	NON-COMM	UNITY SYSTEMS
---	--------	------------	----------	---------------

	Number of	Estimated	Estimated	Percent
Number and Type of Public Water Systems	Systems	Connections	Population	of Total
Group A				
Community Water Systems	102	64,794	168,283	98.666%
Non-Transient Non-Community Water Systems (NTNC) *school, church, business, fire hall, etc.	15	123	5	0.003%
Transient Non-Community Water System (TNC) **corner store, gas station, restaurant, etc.	64	3,673	137	0.080%
Group B (<15 residential connections and < 25 people/day)	234	1,016	2,134	1.251%
Total	415	69,606	170,559	100%

FOUND: 102 GROUP A COMMUNITY SYSTEMS

Jumber and Type of Public Water Systems Systems Connections Population of Total icroup. A		Number of	Estimated	Estimated	Percent
Single A 102 64,794 168,283 98,6667 Non-Transient Non-Community Water Systems (NTNC) 15 123 5 0.003% *school, church, business, fire hall, etc. * 7 15 123 5 0.003% *scone, church, business, fire hall, etc. * 64 3,673 137 0.080% *sconer store, gas station, restaurant, etc. * * 234 1,016 2,134 1.251%	Number and Type of Public Water Systems	Systems	Connections	Population	of Total
Community Water Systems 102 64,794 168,283 98,6667 Non-Transient Non-Community Water Systems (NTNC) 15 123 5 0.003 *school, church, business, fire hall, etc. 7 15 137 0.080% Transient Non-Community Water Systems (NTNC) 64 3,673 137 0.080% **corner store, gas station, restaurant, etc. 100 234 1,016 2,134 1.251%	Group A				
Non-Transient Non-Community Water Systems (NTNC) 15 123 5 0.003% *school, church, business, fice hall, etc. 64 3,673 137 0.080% **corner store, gas station, restaurant, etc. 64 3,673 137 0.080% **corner store, gas station, restaurant, etc. 64 3,673 137 0.280%	Community Water Systems	102	64,794	168,283	98.666%
Transient Non-Community Water System (TNC) 64 3,673 137 0.080% **corner store, gas station, restaurant, etc.	Non-Transient Non-Community Water Systems (NTNC) *school, church, business, fire hall, etc.	15	123	5	0.003%
Froup B (<15 residential connections and < 25 people/day) 234 1,016 2,134 1.251%	Transient Non-Community Water System (TNC) **corner store, gas station, restaurant, etc.	64	3,673	137	0.080%
	Group B (<15 residential connections and < 25 people/day)	234	1,016	2,134	1.251%
otal 415 69,606 170,559 100%	Fotal	415	69,606	170,559	100%







TRAINING AND TECHNICAL SUPPORT

Conducted workshops and met with Group A water systems.

Description	Total In	Systems Engaged	% of Group
	Pilot Group	With	
Community ¹	92	80	87%
TNC (i.e. School/Business)2	40	16	40%
NTNC (Gas Station/Restaurant)3	13	8	62%
Total ⁴	145	104	72%

145 GROUP A SYSTEMS IN PILOT (SHOWN IN LIGHT BLUE)



										Tech	nical										
Utility Ass/Sani Survey (T)	Planning General (T)	Planning Specific (T)	Mapping (T)	Engineering (T)	Design Approval (T)	Insurance (T)	WUE (T)	CCR (T)	Consolidation (T)	Intertic (T)	Maintenance & Operations (T)	Services Meters (T)	Cross Connection Control (T)	Operator Distribution (T)	Operator Treatment (T)	Operator Training (T)	Water Quality (T)	Chlorination (T)	Coliform Monitoring Plan (T)	Water Quantity (T)	Water Rights (T)
32	48	13	39	8	1	1	2	1	94	12	31	2	15	0	1	26	21	8	2	0	23

AREAS OF CAPACITY ASSISTANCE PROVIDED



PROGRAM HIGHLIGHTS: WATER QUALITY/QUANTITY

Covenant Christian School: Source Nitrate Contamination

- Secured grant funding and facilitated consolidation with adjacent systems to resolve significant non-compliance issue.
- Smallwood Shores: GWI Disinfection Needed
 - Responded to DOH request for support. Identified a solution and next steps.
 Provided installation guidance and follow-up training.
- Pleasant Valley: Failing Infrastructure Disinfection Needed
 - Responded to positive E.coli found in drinking water storage. Assisted with emergency response, installation of disinfection and Level 2 Assessment.
- Water Rights Deficiency
 - Facilitating two separate intertie/consolidation feasibility opportunities.

PROGRAM HIGHLIGHTS: SYSTEM MAPPING





<image><image><image><image><image>

WHERE DO WE GO FROM HERE?

GOING FORWARD

- Recognize existing water system limitations
- Encourage water system capacity development
- Continue developing Technical Support Programs
- Better understand potable water supply challenges
- Reconcile water availability with land use projections
- Foster dialogue among systems and with local governments
- Strengthen regional supply through interties and consolidation





Water Supply Symposium Presentation (PPT)



415 WATER SYSTEMS & 415 GOVERNING BODIES



NUMBER AND TYPE OF PUBLIC WATER SYSTEMS

	Number of	Estimated	Estimated	Percent
Number and Type of Public Water Systems	Systems	Connections	Population	of Total
Group A	-			
Community Water Systems	102	64,794	168,283	98.666%
Non-Transient Non-Community Water Systems (NTNC) *school, church, business, fire hall, etc.	15	123	5	0.003%
Transient Non-Community Water System (TNC) **corner store, gas station, restaurant, etc.	64	3,673	137	0.080%
Group B (<15 residential connections and < 25 people/day)	234	1,016	2,134	1.251%
Total	415	69,606	170,559	100%

102 GROUP A COMMUNITY WATER SYSTEMS









GROUP A COMMUNITY WATER AVAILABILITY



SMALL WATER SYSTEM CHALLENGES

- Water Quality Issues
- Water Quantity Issues/Uncertain Water Rights
- Increasing and Complexed Regulations
- Lack of Volunteers and Operator Attrition
- Aging Infrastructure w/Limited Funding
- Organizational Structure from 60's, 70's, 80's
- Never Intended or Designed to Meet Future Demand

INCREASING REGULATIONS AND COMPLEXITY









CONSOLIDATION OF SYSTEMS: NWA, NPWA, CCS





SYSTEM INTER TIES PROVIDE STRONG NETWORK



SMALL SYSTEM TECHNICAL SUPPORT PILOT PROGRAM

PUD No. 1 was invited to partner with the Office of Drinking Water in developing a local Technical Support Program to assist local Small Group A Water Systems with improving their <u>Capacity</u> to run as independent utilities and deliver safe, reliable drinking water to their customers into the future.

SMALL SYSTEM CAPACITY DEVELOPMENT

- The Technical Support Program Provides Opportunity To: • Better understand local capacity needs
 - Explore local capacity development strategies
 - Build relationships in the community to support Capacity development.

The strategy behind this new approach is to support local water systems by building on local relationships and utilizing local expertise to assist small systems with the knowledge, tools, and resources needed to build and maintain Capacity.



TECHNICAL SUPPORT PROGRAM PROGRESS REPORT

- Engaged directly with over 50% of Group A Community Systems
- Provided training through workshops on relevant topics
- \bullet Developed a website with support resources (whatcomwatersystems.org)
- Conducted a survey of small systems needs and concerns
- Provided Individual Technical Assistance in the areas of:
 - Consolidation/Intertie Opportunities and Related Funding Applications
 Governance/Succession Planning
 - Infrastructure Planning/Replacement
 - Water Rights Review/Capacity Analysis
 - Water Quality Support/Emergency Response

BRIDGING THE GAP BETWEEN POTABLE SUPPLY & DEMAND

- Recognize existing water system limitations
- Encourage water system Capacity development
- Continue developing Technical Support Programs
- Better understand potable water supply challenges
- Reconcile water availability with land use projections
- Foster dialogue among systems and with local governments
- Strengthen regional supply through interties and consolidation



- a. Technical Assistance Memorandum
- b. Technical Assistance Memorandum: Supplemental Activity Log (Template)

Drinking Water Capacity Development Program

Technical Assistance Memorandum

Page **1** of **2**

System ID:	System ID	Reference No.:	N21873-0
System Name:	System Name	Lead Entity:	PUD #1 of Whatcom County
System Rep:	System Rep	Proj. Manager:	Dave Olson
Initial Contact Date:	Date mm/dd/yyyy	Initial Contact Method:	Choose an item.
Referred By:	Name		

System Background:

Date: Date mm/dd/yyyy Subject: Click here to enter text.	
Description: Brief Description of activity.	
Take away:Click here to enter text.	
Date: Date mm/dd/vvvv Subject: Click here to enter text.	
Description: Brief Description of activity.	
Take away:Click here to enter text.	
Date: Date mm/dd/yyyy Subject: Click here to enter text.	
Description: Brief Description of activity.	
Take away: Click here to enter text.	
Date: Date mm/dd/vvvv Subject: Click here to enter text.	
Description: Brief Description of activity.	
Take away: Click here to enter text.	
Date: Date mm/dd/vvvv Subject: Click here to enter text.	
Description: Brief Description of activity.	
Take away: Click here to enter text.	
Date mm/dd/www Subject: Click here to enter text	
Description: Brief Description of activity.	
Take away: Click here to enter text.	
Date: Date mm/dd/vvvv Subject: Click here to enter text.	
Description: Brief Description of activity.	
Take away: Click here to enter text.	
Date: Date mm/dd/vvvv Subject: Click here to enter text.	
Description: Brief Description of activity.	
Take away: Click here to enter text.	
Date mm/dd/vvvv Subject: Click here to enter text.	
Description: Brief Description of activity.	
Take away: Click here to enter text.	
Date mm/dd/vvvv Subject: Click here to enter text.	
Description: Brief Description of activity.	
Take away: Click here to enter text.	
Date: Date mm/dd/vvvv Subject: Click here to enter text.	
Description: Brief Description of activity.	
· · · · · · · · · · · · · · · · · · ·	

Drinking Water Capacity Development Program

Technical Assistance Memorandum: Supplemental Activity Log

System ID:	System ID	Reference No.:	N21873-0
System Name:	System Name	Lead Entity:	PUD #1 of Whatcom County
System Rep:	System Rep	Proj. Manager:	Dave Olson
Initial Contact Date:	Date mm/dd/yyyy	Initial Contact Method:	Choose an item.
Referred By:	Name		

System Background: Click here to enter text.

Activity Report:	
Description:	
Click here to enter tex	t.
System Task List:	Click here to enter text.
Obstacles Identified:	Click here to enter text.
Resources Identified:	Click here to enter text.
System	Click here to enter text.
Representative	

Technical Assistance Memorandum Summary

Image: Second	٦	Fechnical Assistance Memorandum Summa	ary			1								-	Tech	nical											Ма	nage	rial			Fir	anci	al		V	√orks	hops	Т	-
Line Action Control Contro Control Control	PWSID	<u>SystemName</u>	Permit													(ļ	E					Ĥ														bili	<u> </u>	<u>a</u>	
Second Second																Ĕ		tro		_			L L L L													<i>(</i>)	Lia I	S		
Provide in the interval of the interval						Ê										Suo		UO	Ξĺ	Ξļ,	~		Ē														ks/	UD C	Ď	
Province						e		F		E	Ē					ati	Ξľ		tio	Į st			bu				< S									ž	Ris	/bu	ש	
1 1						l 2⊓ [E	ifio		<u> </u>	5					pel	s.	tio	nq	Ĕ.	Ĕ		ori		$\widehat{\vdash}$		j,	-								ē	₹ ¥	, id	i i	
Line Line <thlin< th=""> <thline< th=""> Line <thlin< td=""><td></td><td></td><td></td><td></td><td></td><td>S.</td><td>g</td><td>ec.</td><td>, I</td><td></td><td>Ē</td><td></td><td></td><td>F.</td><td></td><td>0</td><td>ete</td><td>lec</td><td>str</td><td>ea</td><td></td><td>티트</td><td>Dit</td><td>E</td><td>is (</td><td>ç</td><td>un e</td><td><u>></u></td><td></td><td></td><td>$\widehat{\mathbf{H}}$</td><td></td><td></td><td><u> </u></td><td></td><td>Vat</td><td>Jtili</td><td>Jap</td><td>Ę</td><td></td></thlin<></thline<></thlin<>						S.	g	ec.	, I		Ē			F.		0	ete	lec	str	ea		티트	Dit	E	is (ç	un e	<u>></u>			$\widehat{\mathbf{H}}$			<u> </u>		Vat	Jtili	Jap	Ę	
Image: Second						an	ene	പ്പ	E .		<u>с</u> – – – – – – – – – – – – – – – – – – –			Ľ,		∞ 00	ž	un l	Πŀ		t l	io i	Ĕ	tity	ght	2	Ë -				g (l	Ω.	1	E I	E)	~ -		2	.	
Under state					9	s/S	ő	ing	bu			Ē	Ê	atic		DC.	ses	ŭ	to	to		nat	E	lan	Ř	ő	U C	Ď		es	oin	g (l	É.	in C	ing	0	3 V 0 0	4 4	2 0	
V D					lo	As:	bu	L L	idd -	din vio	nra	Щ	Ř	lid	E	ena.	ž	SSC	era	era	O O	<u>ori</u>	lifo	ğ	ter	nar	ssi	ົຼ		Ju -	eel	ţij) DC	Sett	Bill	oq		loq		
Image: Problem of the state of the					0	ΞŚ	ī	E a	Ма		us su	ž	8	ISO	itie	nte	Sel	5	ð	56		5	0 0	ter	Na	/eu	e .		S	če	kk	lge	dir	e e	₹	¥s -	r S	rks L	2	
Content Content <t< td=""><td></td><td></td><td></td><td></td><td>5 S</td><td>폭</td><td><u>a</u></td><td></td><td></td><td></td><td></td><td></td><td></td><td>lo O</td><td>nte</td><td>Mai</td><td></td><td>_</td><td>-</td><td>-</td><td>Na</td><td>5</td><td></td><td>Na</td><td></td><td>00</td><td>No.</td><td>Stil 19</td><td>0</td><td>2</td><td>go</td><td>ğŭ</td><td>"</td><td>Sat</td><td>Ξ</td><td>No l</td><td>S S</td><td>No</td><td>2 2</td><td></td></t<>					5 S	폭	<u>a</u>							lo O	nte	Mai		_	-	-	Na	5		Na		00	No.	Stil 19	0	2	go	ğŭ	"	Sat	Ξ	No l	S S	No	2 2	
DDSB CALE WATER DISTRICT NO 19 Creen 1 I <					'		-									-					-			-		Ŭ	" '	1	1-	1	-	-			_				-	
Ordes GATE BAY TRAILER PARK Green 1 <th1< td=""><td>00250</td><td>ACME WATER DISTRICT NO 18</td><td>Green</td><td></td><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>-</td><td></td><td></td><td></td><td></td><td></td><td></td><td>2</td><td>-</td><td></td><td></td><td></td><td>1</td><td></td><td>-</td><td></td><td></td><td></td><td></td><td></td><td></td><td>3</td></th1<>	00250	ACME WATER DISTRICT NO 18	Green		1														-							2	-				1		-							3
11200 ADERGROVE MATER ASSOCIATION Green 1	00496	AGATE BAY TRAILER PARK	Green		1																1					_														1
1827 ANDERSON/GEEK UNGE INCOMENSION Bine 1	01200	ALDERGROVE WATER ASSOCIATION	Green		1					1					1																									2
10230 ANDERSON CREEK WATER ASSOCIATION Bue 1	18237	ANDERSON CREEK LODGE INC	Green		1		Ì						1	I I								1	1							Î.								·	1	1
11109 ARCO AMPRU (ARC S840) Green 1 1 1 1 0 0 04050 BARLENS WATER SSOCC Buo 1 1 1 1 1 0 1 1 1 0 0 05370 BELFERN WEST Green 1 1 1 1 0 1 1 0 1 1 1 0 1 1 1 0 1<	02300	ANDERSON CREEK WATER ASSOCIATION	Blue		1												1				1																			1
104060 [backer view Warter AsSOC Buo 1	01109	ARCO AM/PM (FAC 5840)	Green		1																																			0
106429 BARLENS WATER SYSTEMS Green 1 <	04050	BAKER VIEW WATER ASSOC	Blue		1			1					1								2	2																		4
L0520 BELLERN WASTER ASSOCIATION Green 1 2 1 3 1 3 1 1 3 1	06429	BARLENS WATER SYSTEMS	Green		1																																		1	1
19999 BELERRWEST Green 1	05370	BELFERN WATER ASSOCIATION	Green		1	2	1									1		3								1													1	9
06460 BELL BAY JACKSON WATER ASSOCIATION Green 1<	09899	BELFERN WEST	Green		1		_														1																			1
06500 BELLINGHAWWATER DIVISION, CITY OF Green 1 4 1 1 5 105875 BERTHUSEN ROAD WATER ASSOCIATION Green 1 4 1 1 5 102365 BIRCH BAY SOLIAGE WATER ASSOCIATION Green 1 4 1	05450	BELL BAY JACKSON WATER ASSOCIATION	Green		1		1				_														1	1										1	<u>1 1</u>	1		7
05875 BERTHUSEN ROAD WATER ASSOCIATION Green 1 4 1	05600	BELLINGHAM-WATER DIVISION, CITY OF	Green																																					~
Ubs/2016 Berlindsen Koad Walter Association Green 1 <td< td=""><td>05075</td><td></td><td>0</td><td></td><td>1</td><td></td><td>_</td><td></td><td>4</td><td>_</td><td>_</td><td>_</td><td></td><td>-</td><td></td><td></td><td></td><td>_</td><td>_</td><td>_</td><td>_</td><td>-</td><td></td><td></td><td></td><td></td><td>_</td><td>_</td><td>-</td><td></td><td></td><td></td><td>_</td><td>_</td><td></td><td>1</td><td></td><td></td><td>_</td><td>5</td></td<>	05075		0		1		_		4	_	_	_		-				_	_	_	_	-					_	_	-				_	_		1			_	5
LD2301 IRICH BAY WATER SUBMEY WATER SYSTEM Green IRICH BAY WATER SYSTEM Green IRICH BAY WATER SYSTEM	05875		Green		1		-		4		_		-				_			_		-					_	_	-							1	1 1	_1	-	3
20:30: 0ncl 10: 0	9590/	BIRCH BAY WATER & SEWER DISTRICT	Green		<u> </u>		+	_									-		-									-	-				-	-			<u> </u>	<u> </u>		0
Orizo District Original Original <t< td=""><td>07227</td><td></td><td>Green</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>1</td><td></td><td>-</td><td></td><td></td><td></td><td>Ì</td><td></td><td></td><td>-</td><td></td><td>-</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>0</td></t<>	07227		Green														1		-				Ì			-		-												0
S9379 BLUE MOUNTAIN GRILL WATER SYSTEM Blue 1 0 0 0 AB395 BOXX BERRY FARM WATER SYSTEM Green 1 1 25 2 4 0 0 0 02011 GALMAN JAMES L. Green 1 1 25 2 4 0 0 0 0 10562 CALMOR COVE CLUB Blue 1 1 25 2 4 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1 0<	07300	BLAINE CITY OF	Green																																					0
AB395 BOXX BERRY FARM WATER SYSTEM Green 1 1 25 2 4 4 3 1 <th1< th=""> <th1< th=""> 1</th1<></th1<>	59379	BLUE MOUNTAIN GRILL WATER SYSTEM	Blue		1																																		1	0
02011 CALMAN JAMES L. Green 1 1 1 1 1 1 2 4 1 1 3 3 3 10562 CALMOR COVE CLUB Blue 1 2 6 6 6 1 1 2 177 12641 CAMP LUTHERWOOD Green 1 4 1 <td>AB395</td> <td>BOXX BERRY FARM WATER SYSTEM</td> <td>Green</td> <td></td> <td>1</td> <td>1</td> <td></td> <td>0</td>	AB395	BOXX BERRY FARM WATER SYSTEM	Green		1	1																																		0
10562 CALMOR COVE CLUB Blue 1 1 2 6 6 6 6 6 7 7 12641 CAMP LUTHERWOOD Green 1 4 1 1 1 1 7 12141 CEDAR LYNN WATER ASSOC Blue 1 1 1 1 7 12150 CENTRAL CITY WATER ASSOCIATION Green 1	02011	CALMAN JAMES L.	Green		1		1							25							2	2			4														3 3	35
12641 CAMP LUTHERWOOD Green 1 4 1 1 1 1 1 7 12112 CEDAR LYNN WATER ASSOC Blue 1	10562	CALMOR COVE CLUB	Blue		1	1	2							6		6																	2						1	17
12112 CEDAR LYNN WATER ASSOC Blue 1 <t< td=""><td>12641</td><td>CAMP LUTHERWOOD</td><td>Green</td><td></td><td>1</td><td></td><td>4</td><td></td><td></td><td>1</td><td></td><td></td><td></td><td></td><td></td><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td><td>7</td></t<>	12641	CAMP LUTHERWOOD	Green		1		4			1						1																	1							7
12150 CENTRAL CITY WATER ASSOCIATION Green 1	12112	CEDAR LYNN WATER ASSOC	Blue		1		_		_	_	_										1												_							1
00001 CENTURY WATER ASSOCIATION Green 1 2 2 1 <th1< th=""> 1 1 <</th1<>	12150	CENTRAL CITY WATER ASSOCIATION	Green		1	1	1		1	1	_			3			_								1								2						1	10
01383 CHUCKANUT IRAILS WATER SYSTEM Green 1 4 1	00601	CENTURY WATER ASSOCIATION	Green		1	2	2				_					2	1									1		1 1						_	_				1	10
NP120 COLUMIAL CREEK CAMPGROUND Green Gen	01383		Green		1		_	_	4	_	_	_					_		_	_	_	_	_				_	_	-				_		_	1	<u> </u>	<u> </u>		8
66110 COLUMBIA VALLEY WATER DISTRICT #19 Green Image: Constraint of the constrant of the constraint of the constraint of the constrain	NP120		Green																																					0
AA460 CORNERSTONE CHRISTIAN SCHOOL W.S. Green 1 0 </td <td>66110</td> <td>COLUMBIA VALLEY WATER DISTRICT #19</td> <td>Green</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>1</td> <td>1</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>1</td> <td></td> <td>0</td>	66110	COLUMBIA VALLEY WATER DISTRICT #19	Green										1	1									1																	0
AA553 CORNERSTONE COMMUNITY CHURCH Green 1 Image: Constraint of the constraint of t	AA460	CORNERSTONE CHRISTIAN SCHOOL W.S.	Green		_ 1																																	·		0
07028 CORNWALL CHURCH OF GOD W.S. Green 1 2 <th2< th=""> <th2< th=""> 2</th2<></th2<>	AA553	CORNERSTONE COMMUNITY CHURCH	Green		1																																			0
15510 COUNTRY HAVEN WATER ASSOC Blue 1 1 9 1	07028	CORNWALL CHURCH OF GOD W.S.	Green		1																																		2	2
15596 COVENANT CHRISTIAN SCHOOL Green 1 1 3 1 1 9 1 1 9 1 1 21 17050 CUSTER WATER ASSOCIATION Green 1 1 9 1	15510	COUNTRY HAVEN WATER ASSOC	Blue		1																1																			1
17050 CUSTER WATER ASSOCIATION Green 1 1 AC765 DAKOTA CREEK GOLF CLUB WATER SYSTEM Blue 1 0	15596	COVENANT CHRISTIAN SCHOOL	Green		1	1	3			1 1				9		1	1																4						2	21
AC765 IDAKOTA CREEK GOLF CLUB WATER SYSTEM Blue 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	17050	CUSTER WATER ASSOCIATION	Green		1	\vdash	\rightarrow		_		_		1	<u> </u>				\rightarrow	_			_	1						-	<u> </u>										1
	AC765	DAKUTA CREEK GOLF CLUB WATER SYSTEM	Blue		1	┢┻┝	_				_	+		<u> </u>		\vdash				+		_					-+	_	-	<u> </u>					_					0
AB912 DEER CREEK WATER ASSNGUDE SOUTH Green 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	AB912	DEER CREEK WATER ASSN/GUIDE SOUTH	Green		1		-			_	_		-	4	2	4	_				1	_				4		_	4				~			4	4			1
10410 UEEK UKEEK WATER ASSULIATION Green 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	18418		Green		1	┢┼┥	-		_		_	+	\vdash	4	3	\vdash	+	-+	-+	+	+	+				1		+	11				2	-+	-	I	<u> </u>			10
	18750		Vellow	H	1	\vdash	+		3		_	+	+	1			+	+			1		+			-		+-	+	┢──			-+	_	-	1	1 1	1	1 1	10
	56751	DEMING LOG SHOW & RV	Blue	H	1		+		<u> </u>		-	+	1	+			+	+	_		+		1					+	1	1			-+	-+	-		<u> </u>	_ <u> </u>		0
	18800	DEMING WATER ASSOCIATION	Green		1	1	1	-	1		1		1	1		2	+	1	-			+	1			4	+	1	1	1	3	6	2	3	-				2	27
	19200	DIABLO WTR SYS-SEATTLE CITY LIGHT	Green				Ť						1	1				Ť								-		Ť	1		-	-		Í						0
19570 DODSON IGA MARKET Blue 1 0 0 0	19570	DODSON IGA MARKET	Blue		1							Ĺ	Ĺ									1																		0

٦	echnical Assistance Memorandum Summa	ary											Teo	chnica	al											Mana	geria	al			Fina	anci	al			Wor	rksh	ops		
PWSID	<u>SystemName</u>	Permit														T)					í	Ê											<u> </u>				bili	<u> </u>	la	
														E		lo	(_ _													~	ы	Ľ.	s.	sidu	
				Ê										Suc		ont	L) (E			i li	Б			E										ghts	ecti	ks/	Ъ	še	
				Э		E		į	Ê					atic	F	O C	tior	änt	F			g			2										Rig	lete	Sis)b(e	
				Ž	E	ific			a a					Der) S	tior	pul	Ĕ	ing		~ ·	Ë.	_ ĺ	_	j										er	Ц Ц	Σ	pi	÷	
				ທັ	<u>a</u>	eci	_	F	2 í	<u> </u>		F	-	Ō	eter	ect	stri	eat	ain	F	E	¹	E	s c		Σ				$\widehat{\mathbf{H}}$					Vat	ea	Ē	, lap	Ĕ	
				ani	ne	S	E	ing	dd	0		4	É	8 8	ž	nno	Ö	Ě	Ē	<u>ک</u>	io :	۶Ľ	- It			p				g (F	Ω.		Ē	F)	>		ر 	2	5	
			q	s/S	G	bu	ng	eer	₹ u	e E	ĒĿ	E i		U U U	es	ŏ	tor	tor	tor	ali	nat	ε	alla	2 8		i lõ			es	i	5	E.	ing	ing	o 1	0 2	03	4	05	
			ī	As	g	E	dd	gi	sig	ura ura	1	Y T		sua -	<u>S</u>	SSC	era	era	era	đ	in i	e l	đ.		SS: a	D D	Ś		¹	eel	ti	b	Sett	Bill	ho	ho	Po L	ho	ho	
			0	ity	nni	Ба	Ma	Ш	De.				stie	inter 1	Se	C	dО	g	g	ter	<u>ଟ</u> ।	ပို	ter			i <u>c</u>	ak	icy	Ğ	X	gge	Jal I	e)	ity	rks	rks	ЧŚ	rks	rks	
			TSI	Ē	Pla							č		Ма						8 Na			Na Na	Ċ	S S	Tra	Byl	Pol	D D	BO	Ъй	J.	Rat	Util	٧٥	∿ No	° ∾	Ň	Š	
																				-													_	_	-	-	_		-	
19890	DOUBLE L MOBILE HOME PARK	Blue	1																													-	-				_	_		0
FS117	DOUGLAS FIR CAMPGROUND - EAST	Blue																														-	-							0
FS119	DOUGLAS FIR CAMPGROUND - WEST	Blue									T										T										\neg	十	ヿ							0
58951	EHLERS LABOR CAMP	Blue	1												L																									0
22895	ELIZA ISLAND BEACH CLUB	Green	1																																				1	1
23480	ENTERPRISE ESTATES WATER ASSOC.	Green	1						Ţ					2							T	T	T					1		1		\bot	\square			2	1	2		9
23485	ENTERPRISE TERRACE WATER ASSN.	Green	1	1	2					1	2			1					Ļ					Ĺ	<u> </u>	_				\square	\rightarrow	\downarrow	\downarrow					1	\square	8
24151	EVERGREEN MOBILE PARK & SALES	Blue	1								_	_		_	<u> </u>				1			_	_	_		_					\rightarrow	\rightarrow	\rightarrow						_	1
24164		Green	1	-	4					_	_	_		_					1				_	_	_	_					\rightarrow	_	_						-	1
24195	EVERSON WATER ASSOC	Green	1	1	1					_	_			-		1				_			_	_	_	_				\rightarrow	\rightarrow		\rightarrow				—		-	15
24200		Blue	1	_	-					_	+	_	_	_		-			1	-	-		_	_	_	_	_				-+	+	\rightarrow	_			—		-	
ES1/6	EVERTBODT STORE	Green	-		-				-		+									-			-	-							-+	-		-						0
02601		Green	1		1				-		+	3	3							-			-	1						_		-	-	_						5
24850	FERNDAL F	Green										Ť	-																			-	-							Ť
2.000		0.001																																						0
24840	FERNDALE MOBILE VILLAGE	Green	1																																				1	1
25610	FLEMINGS PLATT WATER ASSOCIATION	Blue	1																																				2	2
27450	GEORGIA MANOR WATER ASSOC	Green	1		2									2																		_	_							4
27755	GLACIER SPRINGS WATER SYSTEM	Green	1																																					0
95915	GLACIER WATER DISTRICT	Green	1																													_	_							0
87772	GLEN COMMUNITY ASSOCIATION	Green																																						0
27950	GLEN COVE WATER ASSOCIATION	Green	1																																					0
28050	GLENHAVEN LAKES CLUB	Green	1																													_							_	0
NP310	GOODELL CAMPGROUND	Blue										_	_																	$ \rightarrow$	\rightarrow	_	_						_	0
28950	GRANDVIEW BEACH WATER ASSOC INC	Green	1									_	_	_												_					_	_	_						-	0
00638	GRANDVIEW-NORTHGATE INDUSTRIAL PARK	Green	1				_			_		_														_						_	_		2				<u> </u>	2
30200	GUIDE MERIDIAN WATER ASSOCIATION	Green	1				2			_	_		_	_									_	_	_	_					\rightarrow	_	_		1	1	1	1	1	8
30800	HAMPTON WATER ASSOCIATION	Blue	1							_		- 4	+	_											_	_				_		4	\rightarrow					1	-	9
31355		Green	1	-+					+		+		_	_	-					-+	-+			_		+	\vdash			\rightarrow	+	+	+		1	1	- 1	1	$\frac{1}{1}$	E
32300		Green	1	-+					+		+		_	4	-					-+	-+			_		+	\vdash			\rightarrow	+	+	+			<u> </u>	<u> </u>	<u> </u>	╧╋	3
50077		Green	1							_	_	_	_	1						_			_	_	_	_				\rightarrow	\rightarrow	-	\rightarrow						-	1
F53//		Blue						_	_	_		_	_	_						_	_		_		_	_					-+	+	+						-	0
56700		Green	1	_					-											-	-		-	-															-	0
07087	INERA PACIFIC WATER SYSTEM	Green	1						+		+		+	+	\vdash					-+	-+			+	+	+			-	\dashv	+	+	+	_	-				$\frac{1}{1}$	1
35800	INTAL CO ALLIMINUM CORPORATION WS	Green	1						+		+		+	+	\vdash					-+	-+			+	+	+			-	\dashv	+	+	+	_	-				÷	0
36268	ISLE AIRE BEACH ASSOCIATION	Green	1								T										T										\neg	十	ヿ			1				1
37950	KELLY ROAD WATER ASSOCIATION	Blue	1												L				1																					1
08225V	KENDALL ELEMENTARY SCHOOL	Green	1																																					0
00119	KONTREE APARTMENTS WATER SYSTEM	Blue	1						T			1									T		T								\bot	\Box	\Box							1
44540	LAKE SAMISH TERRACE PARK	Green	1					\square											1												\perp	\bot	$ \downarrow$					<u> </u>	_	1
44950	LAKE TERRILL WATER ASSOC	Green	1								_			_	<u> </u>											_					\rightarrow	\rightarrow	\rightarrow		2	1	1	1	_	5
46300	LAUREL WEST WATER ASSOCIATION	Blue	1												1																	⊥								0

٦	echnical Assistance Memorandum Summa	ary												Tech	nnica	l										Μ	anage	erial			Fin	anci	al		1	Nork	shop	s	
PWSID	SystemName	Permit															F					Í	ì										T			8	5	a	
															E		2																		~	un .	N La	id L	
					Ê										Suc		ont		E			Ē				,									hts	ecti	λ Υ C	j 炎	
					Š	Į	E		Ē	2					atic	Ĥ	0	io	ij	F		2	20			S									Rig) ete		b e	
					ΞĘ	E	1C			3					Der) s	lior	pnq	Ĕ	ing) –		L F		ing									e		z z	zi iz	
					ดี	a	ec.	_ !			-		F		õ	etei	ect	stri	eat	ain	۱L	t i) s		L L	Σ			í.					Vat	ea		칠	
					ani	e	S E	EL.		2 0	-		Ú.		∞ ∞	ž		ō	Ē	Ē	 		Į į	計	N S	Ъ	ard			g (F	<u> </u>		<u>т</u>	Щ,	>		<u>م</u> ر	: 0	
				q	S/S	ש פ	ßu	bu		O C	E	Ē	atio		ло П	es	ŏ	tor	tor	tor	ali	uat		i i i i i i i i i i i i i i i i i i i	Sc	ы	ğ		es	jÜ	g (F	É.	ing.	ing	0	0 2	0 0 4	0.5	
				lo	As	Ð		dd -	gin	nra	Щ	Ř	lid	E	sna	Ś	SSC	era	era	era	ğ []	if o	Ō	ter 8	nar	SSi	ړ او		Ę	eel	ting) DL	Gett	Bill	loq	lo r			
				0	ιζ		2	Ma	йЦ	Sul	۲ ۲	8	sc	etie	це	Sei	5 S	ð	ð	g	fer	S S	p t	s S	/en	SCe	iri	l ∂	če	X	ge	dir	Ð	ī₹	rks	rks -	rks Ks	1 S	
				IS	3								õ	nte	Nai						Na		N N		Ó	Suc	Tra	00	2	ğ	Яŭ	E	3aı	Ξ	N0	No No	2 2	2 N	
				·	- -	-							Ŭ	—	_						_		[Ŭ	••	'	. _	1	—	_		- '	_	_		-	-	
43290	LISECC - Lummi Island Scenic Estates	Green		1		1																							1	2			-				1		4
29014	LOUIE. JOE WATER ASSOCIATION	Green		1		1																			1				1				-		1	1	1 1	ī —	5
48875	LUMMI POINT WATER ASSOCIATION	Green		1																													-						0
52957	LWWSD - AGATE HEIGHTS - Tribal	Green																																					0
08118	LWWSD - EAGLERIDGE - Tribal	Green																																					0
95910	LWWSD - SOUTH SHORE WATER SYSTEM -	Green																																					0
35216	LYNDEN B.SGSA, BELLINGHAM PMT	Blue				Γ		T													T												\square						0
49150	LYNDEN WATER DEPARTMENT	Green										1	1	1											1				1										
				_			_				_										1			2				_					_	_					3
49890		Blue		1		_	_	_	_	_	-									1	_	_	_	_	-		_	-	-			-	+			—			1
50900	MANTHEYS COUNTRY MOBILE PARK	Blue		1		_	_	_	_		-	-								-	_	_					_	-				-	-+-		1				1
51100		Green		1	_	-		1	_	_	-		1					-		-	_		-	1	-		_	-	-			5	-	-	1	1	1 1		15
ΔR23/		Green		1	_	-		<u> </u>			-		-					-	-	-	-			+ -				-				5	+	-		<u> </u>	<u> </u>		0
25601		Blue		1																													-						0
56874	MOUNT BAKER MOBILE HOME PARK	Blue		1											1					1																			2
01468	MOUNT BAKER SCHOOL DISTRICT-DEMING	Green		1																																		1	1
01357	MOUNT BAKER SKI AREA - WHITE SALMON	Blue		1																																			0
56500	MOUNT BAKER WATER ASSOCIATION	Green		1													3																						3
57671	MOUNTAIN VIEW BUSINESS PARK	Green		1	4	3		1	1		_				1									_	_			_					_						10
04048	MOUNTAIN VIEW KINGDOM HALL WS	Blue		1		_	4	4			_		4		4							_	_	_	4		_	-	-			~	\rightarrow						12
56900 15676		Green		1		-	4	1	_		-	-	4		1						_	_					_	-				2	-+-						13
10070 ND060		Green		-	_	-		_	_	_	-							-		-	_		-	_	-		_	-	-			-	-	-					0
58950	NEPTIME REACH WATER ASSOC	Blue		1		-		-			-							-	-	1	-							-				-	+	-					1
NP012	NEWHAI EM CAMPGROLIND & VISITOR CTR	Blue				-													-	<u> </u>	-											-	-						0
59250	NEWHALEM WATER SYSTEM	Green																							1				1				-						0
59850	NOOKSACK VALLEY WATER ASSOCIATION	Green		1													1																-						1
59800	NOOKSACK WATER DEPT	Green																																					0
04235	NORTH BELLINGHAM GOLF COURSE	Green		1																1													エ						1
57675	NORTH COUNTY CHRIST THE KING CHURCH	Green		1							_									1				_	_			_					_						1
AC316	NORTH FORK COMM LIBRARY - KENDALL	Green		4		_		_		+	_	-	-		\square			_		_			+	_				_	-	<u> </u>		+	+	_					0
57591	NORTH FORK WATER SYSTEM	Blue		1		_		_			_									1		_	_	_	-		_	_	_				\rightarrow						0
5/797	NORTH LAKE SAMISH SHELL MARKET	Green	_	1	_	_			_	_	_		1							-	_	_	_	_	_		_	_	-			_	+						1
07507		Blue		1		-		-			-	-	-						_	1	_			_	-		_	-					-+-						1
62000		Green		1		1	5 1	10		+	+	\mathbf{t}	2	1	┝─┼	_		-		<u> </u>			+	1	5	2			+	2	1	-+	$\frac{1}{2}$	2	1		1	1	37
63350	OLD SETTLERS WATER ASSOCIATION	Green		1		1	-	-		+	1	1	2	† ·						\neg			+	+	Ť			+	1	Ē		+	÷	-			<u> </u>	<u> </u>	3
64150	ORCHARD WATER ASSOC	Green		1		2		1		1	1	1	t	1	1								\top		1			1	1	1		\neg	+	-					3
AB638	OSTROM MUSHROOM FARM WATER SYSTEM	Green		1						L		Ĺ	Ĺ	L						1										L									1
29746	OWNERS ASSOC OF BEACH CLUB CONDOS	Green		1																																			0
02197	PARADISE MARKET 1	Green		1		_									Ļ																		\bot	[0
66116	PARADISE PARK WATER SYSTEM	Green		1		1			1	+	_	┡	\vdash	L	2		$\left - \right $						+		4			_	4	 			\rightarrow	_					5
67020	PERCIE ROAD WATER ASSOCIATION	Green		1		-	_	-+	1	+	+	1	1		\vdash			_	1	1	-+		+	-					+			-+	+	-				<u> </u>	12
01222	i eu uyas i el ludie i el li li la			1		1			1				1						1	1				2															13

Т	echnical Assistance Memorandum Summa	ary											-	Tech	nnica	l										Ma	nager	ial			Fir	nanc	ial			Wo	rksho	ops	
PWSID	SystemName	Permit													(F					Γ															bili	ç	B
															E S		trol	Ē				LE LE													s	ion	Lia	S I	<u>ה</u>
					Ê										ü		uo:	Ľ	E			Ĕ				$\widehat{\boldsymbol{\varsigma}}$									ght	ect	iks/	С D d	Ď Ľ
					ey		Ë		E	Ē					rati	Ē		tio	ent			ng													Ŗ	Det	Ris:	/gu	<u>u</u>
					2n	E	ij			5					be	SIS	stio	ibu	đ	.Ĕ		tori		Ê		i i									ter	ж Г	ī₹	ppi	5
					i S	era	bed) d	E	-		E		0	lete	Dec	isti	rea	rair	ÊĽ	oni		Its	Î	an				<u>ш</u>			ш	F	Wa	Lea	Ē	Ma	5
					Sar	ene	S		Anr	e e		_	u		e e	Σ	IUO	Ē	F.	F F	ity tio	Σ	Dtity	igh	e (l	E S	5) bc	£	_	g (l	g (F		- ci	÷	÷ i	
				dno	ss/s	Ū.	ij	ü	ee u	ano	E	E	lati		anc	ce	S	ato	ato	ato	ual	L L	uai	L L L	n U		ß		res	spir	р Б	Ē	ttin	llin	d d	d	8	d v	रे
				5 D	¥,	ing	anr	app	ngir Pisic	sur	5	S.	ei:	<u>с</u>	en	N.	SO.	ber	Ser	Ser	Qlē	olif	ā	ate	шs	sse	NS S	_	npe	¥e	etir	ing	Se	ä	sho	sho	sho	sho	20
				Ē.	ility	anr	₫	Σ	μČ	<u> د</u>	≥	õ	suc	teti	aint	ő	Ō	ō	ō	ō	Clate	Ŭ	ate	>	Sve	D ICO	/av	-ici	00	Х Х	6pr	pu	ate	ility	ork	ork	ş	y S	5
				Ĕ	5 I	ā							ŏ	Ъ	Ë						≥		\geq		Ğ	ທັ ¹	E 🗹	Ъ	Ъ	щ	щ	щ	Ř	Ę	\geq	\geq	\geq	3	^
																																						┶	
55450	PHILLIPS 66 COMPANY	Green		1			1		1																														2
52681	PLANTATION RANGE	Blue			_	_		_			_																												0
67900	PLEASANT VALLEY WATER SYSTEM	Green		1	1	1	\rightarrow	3		+	_	+	3		2			-+	-+	-+	2 6	1			+	-+	_	<u> </u>					_		—		—		25
95750	POINT ROBERTS WATER DISTRICT #4	Green										1																											0
68350	ΡΟΙ Ε ΒΟΔΟ WATER ASSOCIATION	Green		1	-+	+	+			+	+	┼─	-		⊢				-+	-+		+	+				+	-					\dashv		1	1	1	1 (2 6
56829	RADER FARMS LABOR CAMP	Blue		1	+	3	\neg	\neg	-	+	1	1	6		\vdash			-	+	+	4	1				-						14	\neg		<u> </u>		<u> </u>	<u> </u>	27
27631	RASPBERRY RIDGE WATER ASSOCIATION	Green		1		Ť	1	2		1	1	1	Ē	1			1		\neg	1		1				-		1				·	-						4
71290	RATHBONE PARK WATER ASSOC	Yellow		1		1						L	L												1			L		1									3
08495	RIVER OF LIFE COMMUNITY CHURCH	Blue		1																																			0
72800	RIVER RD WATER ASSOCIATION	Green		1																																		1	1
73750	ROEDERLAND WATER ASSOCIATION	Blue		1				2																															2
NP160	ROSS LAKE RESORT	Blue									_																												0
74705	ROYAL COACHMAN MOBIL EST	Green		1							_											_		-															0
AD513K	Rubicon Property 1 LLC	Blue		1		_					_		1									_		2			_												3
15064		Blue	_	4		_					_											-					_						\rightarrow		4	4		4	1 5
76105		Green	_	-		-	_	-			_											-				_									1				
FS020		Blue		_						_	_								_	_		_					_						\rightarrow						0
FS045	SILVER FIR CAMPGROUND EAST	Blue		-		-	-	-	_		-							-									-						-+						0
52666	SILVER LAKE PARK - HORSE CAMP	Blue				-		-	_									-								_							-						0
52679	SILVER LAKE PARK - MAIN CAMPGROUND	Blue																																					0
79800	SKOOKUM CHUCK WATER ASSOCIATION	Green		1									6	3										8											1	1	1	1 '	1 22
AA034	SLAVIC GOSPEL CHURCH WATER SYSTEM	Blue		1																																			0
23011	SMALLWOOD SHORES WELL	Blue		1	8		1													1	2																		1 13
80550	SMITH ROAD WATER ASSOCIATION	Blue		1																															1				1
58864	STARVIN SAM S #15 KENDALL WATER SYS	Green		1																																			0
56821	STARVIN-SAM S #19/SLATER ROAD WS	Green		1							_										_	_																1	1 1
84850	SUMAS RURAL WATER ASSOCIATION	Green		1		\rightarrow	1	1		+	_	4	<u> </u>		\square				\rightarrow	\rightarrow	9	_			\square		_	<u> </u>		$\left - \right $					<u> </u>				11
84870	SUMAS WATER DEPT	Green		1		+	_			_	_	<u> </u>	<u> </u>		\square				_			+	<u> </u>			_	-	<u> </u>					_		—				0
06514		Green		1	\vdash	+	\rightarrow	-+		+	+	+	-		\vdash			-+	+	+	-+	+	-		-+	-+	+	-				_	—		-				0
06514	SUNSET WATER & MAINTENANCE ASSUC	Green		1						_	_								_	_		_					_						\rightarrow					1	1
5030/	SWIET OPEEK CAMPODOLIND WATER SYSTEM	Green		-	-	-		-	_		-							-				-	-		_	-							\rightarrow					<u> </u>	-
55554	SWILL ONCEN ON STOOND WATER STOTEM	Green																																					0
87120	TALL CEDARS ESTATES WATER ASSOC.	Blue		1		1	1			1	1	1	1						\neg	1		1				-		1					-						1 3
AD051A	THE CHEESE FARM	Green		1																1																			1
08262	THE RUSSELL GROUP WATER SYSTEM	Green		1																																			0
88050	THORNTON WATER ASSOCIATION	Green		1																																			0
05754	UPPER BAKER WATER SYSTEM	Blue		1														[[\square														0
91000	VALLEY VIEW WATER ASSOC	Green		1																																			0
56831	VICENTE FARMS & SONS ENTERPRISE	Green		1														[[1					\square														1
02153	VICENTE FARMS & SONS-MISSION	Blue		1						4	_	1			\square				$ \rightarrow $	1			<u> </u>				_	<u> </u>											1
91650	VICTOR WATER ASSOCIATION	Blue		1									1																										1

-	Technical Assistance Memorandum Summa	ary											٦	Tech	nnica	I										ſ	/Jana	igeri	al			Fir	nano	cial			Wo	ksh	ops		
<u>PWSID</u>	<u>SystemName</u>	<u>Permit</u>		TSP Group	Utility Ass/Sani Survey (T)	Planning Specific (T)	Mapping (T)	Engineering (T)	Design Approval (T)	Insurance (T)	WUE (T)	CCR (T)	Consolidation (T)	Intetie (T)	Maintenance & Operations (T)	Services Meters (T)	Cross Connection Control (T	Operator Distribution (T)	Operator Treatment (T)	Operator Training (T)	Water Quality (T)	Colifornation (T)		Water Qualitity (T) Mater Rinhts (T)	Governance (M)	Succession Planning (M)	Training Board (M)	Bylaws	Policy	Procedures	Bookkeeping (F)	Budgeting (F)	Funding (F)	Rate Setting (F)	Utility Billing (F)	Workshop 1: Water Rights	Workshop 2: Leak Detection	Workshop 3: Utility Risks/Liabil	Workshop 4: Mapping/GPS	Workshop 5: Chlorine Residual	
92150	WAHL WATER ASSOC	Blue		1									1	1																											2
95914	WHATCOM COUNTY WATER DIST #13	Green																																							0
95700	WHATCOM COUNTY WATER DIST #2	Green		1																																1	1	1	1	1	5
95900	WHATCOM COUNTY WATER DIST #7	Green		1																																1	2	1	1	1	6
95935	WHATCOM MEADOWS	Green		1																																				1	1
96700	WICKERSHAM WATER ASSOCIATION	Blue		1																																1					1
96888	WILDWOOD RESORT	Green		1																1																					1
97110	WILLEYS LAKE TERRACE WATER ASSN	Green		1	1										1					·											1	1	1								5
61494	WISER LAKE KINGDOM HALL JEHOVAHS	Green		1																					T	1															0
99550	Y-SQUALICUM WATER ASSN	Green		1	2 2	2	3							1	2		5								5			1	1			2	2	1			2	2			31
	TSP Group Totals		1	45	32 4	8 13	3 39	8	1	1	2	1	94	12	31	2	15	0	1	26	21	8	2 () 2	3 23	3 2	1	3	4	0	11	10	48	6	2	22	21	17	22 :	32 F	604
	Community			92																																				F	604
	TNC			40																																					-
	NTNC			13																																					
	Non TSP Group/Group B																																								
	Andy Garci																				1																				
	Sue Craft				1	2									1																										
50155	Marine View Estates Water System					1									1																1										
	Loomis Trail Area					3																																			
02394W	Lake Padden Estates Water Association										1				1	1	1														1										
	Jay Almwala					1																																			
42291	Glen Echo Water System					1			1																																
24900F	Fertile Meadows Water Association		\square											1	1									1														$ \blacksquare $	\square	\perp	
	Andy Ross		\square				1								1						1													\vdash					\rightarrow	\perp	
L	Cascade West		\square			_	\bot						1		1								⊥			4								<u> </u>					\rightarrow	\rightarrow	
L	South Lake Samish Community		\square		2 1	_	\bot																			4													\rightarrow	\rightarrow	
			\vdash		3 4	+			1	_	_		,	2	1	_		_		1				1		_							1						_	ᆃ	
	Non ISP Totals		\square		5 1	4 0	0	0	2	0	1	0	1	3	1	1	1	0	0	1	2	0) () 2	2 0	0	0	0	0	0	2	0	1	0	0	0	0	0	0	U	43
	ISP Totals				37 6	2 13	39	8	3	1	3	1	95	15	38	3	16	0	1	27	23	8	2 (2 נ	5 23	3 2	1	3	4	0	13	10	49	6	2	22	21	17	22	32 6	547
Appendix 19

PUD Technical Support Pilot Program Press Release



TECHNICAL SUPPORT PROGRAM FOR WHATCOM COUNTY GROUP A WATER SYSTEMS



(<1,000 Connections)

The Office of Drinking Water is committed to protect the health of the people of Washington State by assuring safe and reliable drinking water. The goal is to assist small systems in acquiring and maintaining Technical, Managerial, and Financial (TMF) Capacity for long term safe reliable supplies of drinking water.

Training opportunities are widely available to build a broad base of knowledge. But many of the technical, managerial, and financial capacity challenges facing small water system cannot be addressed adequately in the classroom training environment and require one-on-one technical support facilitated by state and local agencies in partnership with qualified technical support providers at the local level.

Public Utility District No. 1 of Whatcom County has partnered with the Office of Drinking Water to develop a local Technical Support Program (TSP) that will assist local Small Group A Water Systems with less than 1,000 connections improve their Capacity to run as independent utilities capable of providing Safe, Reliable, and Sustainable drinking water to their customers well into the future. This pilot program is one of only two in Washington State and offers a new way of supporting local water systems by building on local relationships and utilizing local expertise to improve water system Capacity.

The Technical Support Program provides a broad range of technical support including local training opportunities and workshops such as financial management planning, budget preparation, capital planning and rate setting, as well as one-onone technical assistance for water system operations, compliance with drinking water regulations, restructuring and consolidation opportunities.

Over past seven years, the PUD has partnered with the Office of Drinking Water on a number of successful capacity building projects in Whatcom County ranging from:

- Providing technical, managerial, or financial capacity support.
- Evaluating and facilitating solutions to ground water nitrate contamination.
- Aiding systems in consolidating with neighboring water systems.
- Funding and construction of inter-tie pipelines.

For more information visit w ww.whatcomwatersystems.org

